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ABSTRACT

Presented are environmental education lessons adapted for use in the second-grade classes of Pinellas County, Florida. Many examples are drawn from local situations. Six conceptual schemes provide the guide's organizational framework: interrelationships, heredity and environment, change, effects of population growth, finite resources, and individual responsibility. Following a discussion of each scheme are outlines of related activities. These learning experiences include art projects, science experiments, class discussions, and three student workbooks. Also provided are illustrated test sheets with accompanying questions for the teacher to ask. (WB)

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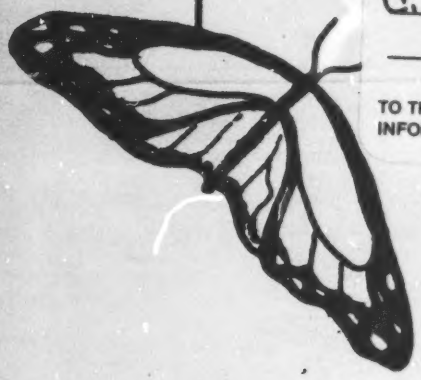
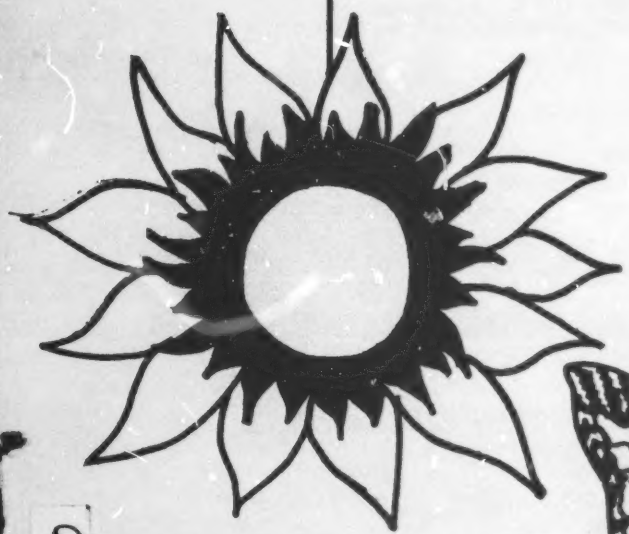
ENVIRONMENTAL EDUCATION INTERDISCIPLINARY CONCEPTS AND ACTIVITIES GUIDE

GRADE 2





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The School Board of Pinellas County
Gus Sakkis, Superintendent

ENVIRONMENTAL EDUCATION

INTERDISCIPLINARY CONCEPTS and ACTIVITIES

GUIDE - GRADE 2

This publication is one of a series of interdisciplinary environmental activity guides made available for the elementary schools of Pinellas County. The original of this publication serves as the teaching nucleus for Environmental Education activities in grade two in Lee County, Florida. The development of the program was a joint effort of the teachers, students and staff of the Lee County Schools under the supervision, and in cooperation with the Lee County Environmental Education Center. The publication has been modified to facilitate its use in the schools of Pinellas County.

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INTRODUCTION

Pinellas County has experienced a tremendous influx of permanent residents over the past few years. It is beginning to experience many of the problems associated with a high density population contained within a limited geographical area. The environment of Pinellas County, which has provided an abundancy of clean water, air, greenery, and sun, has been a major attraction for the young and old, the working people, and many of the retired. It is these very things, however, which are being strained by the demands of a steadily increasing population.

Within the last few years, problems have arisen in providing enough fresh potable water, effective waste disposal and sewage treatment, electric power, fuel oil, gasoline, other energy sources, recreational areas, and other such services and supplies which people need. Air and water pollution, once completely foreign to the county, are now becoming increasingly evident. Long term residents give testimony to the rapidly declining quality of the environment. They are complaining, and rightfully so, that the quality of the environment which attracted them to settle here has been adversely affected.

If the present growth-use trends are permitted to continue for too many years, Pinellas County will, indeed, find itself in severe trouble. Not only will it become increasingly difficult to maintain the services which people expect and demand, but it will also be highly improbable that the deterioration of the environment will be slowed or reversed. There may come a time, in the not too distant future, when Pinellas County will

not be an attractive place, either to live, or visit. When this occurs, one of the major economic bases of this county, that of tourism, will be reduced drastically. This, most certainly, will result in an even further decline in the ability of the county to maintain services and support.

The energy crisis has recently become one of the foremost problems in Pinellas County. This has been particularly felt in a county where over 80% of the residents depend on their automobiles for transportation to and from work. It is now apparent that the need for an efficient mass transportation system is immediate, but such a system is slow in coming. The availability of electrical power is now just barely ahead of the demand. If the demand continues to increase at its present rate, it will soon exceed the available supply, and yet another energy crisis will be experienced in Pinellas County. Alternate plans of energy supply have not yet been exploited. Solar energy could represent one of the best alternatives for Pinellas County, and most of Florida.

There is no easy or simple answer to the environmental problems of Pinellas County due to the complexity of the causative agents. One of the answers lies in effective city and county planning and management. This, however, depends to a large extent on educated and responsive citizenry. Unless the residents who consider Pinellas County their permanent home become aware of the long range cause and effect aspects of county management and growth potential, and the combined effects on the environment, little will be done to

protect their interests. In the past, it has been the case of too little and too late.

The educational system of Pinellas County can provide an opportunity for the citizens that it serves to become familiar with the environment in which they live and in the important part that it plays in their lives. Through a good comprehensive program, the citizens may not only become aware of the problems and the alternatives, but they may also advance to actually helping with the solutions to some of the problems.

Today's students are going to face an ever-increasing burden of environmental choices. Many of these choices are not going to be easy. The students will require a good foundation in several discipline areas as the solutions to environmental problems usually encompass the total spectrum of human thought and activity. Determination of the level of pollution in a waterway is only the first step toward the solution of a problem. Correcting the degradation of the waterway will require input from politicians, scientists, businessmen, communication experts, frequently artists, and always the general public. Attaining environmental quality is everyone's responsibility, and, as such, is going to require knowledge on the part of all our citizens. If your students are to make intelligent choices they will feel comfortable living with, they are going to need you to provide them with much of the background information they will need. Our environmental problems demand our attention in every phase

of the curriculum so that our students can be prepared to solve this enigma.

Predicting the experiences and knowledge students will need in the future is always a difficult task. However, a few basics are readily identifiable. It seems logical to assume that a person cannot make intelligent decisions if he is not aware of the problem, or even the existence of the area that has the problem. Next, it is important that he understands or has some basic knowledge about the stressed area and the stress factors involved. Finally, once an individual is aware of a problem and has knowledge about it, he must have the tools to effect a solution for the problem. Thus, awareness of the environment, knowledge of the environment and action in the sense of effecting a solution are three themes in educating a student to prepare him for environmental choices.

You will notice that each of the concepts is placed into one of six fundamental conceptual schemes. Those conceptual schemes are listed before each section along with a brief explanation of their meaning.

Notice, as you look through the guide, that the conceptual schemes are divided into sections with a conceptual scheme and a full page picture to mark the beginning of each section. The pictures have been drawn to illustrate and further define the conceptual scheme. Note that every concept is also illustrated.

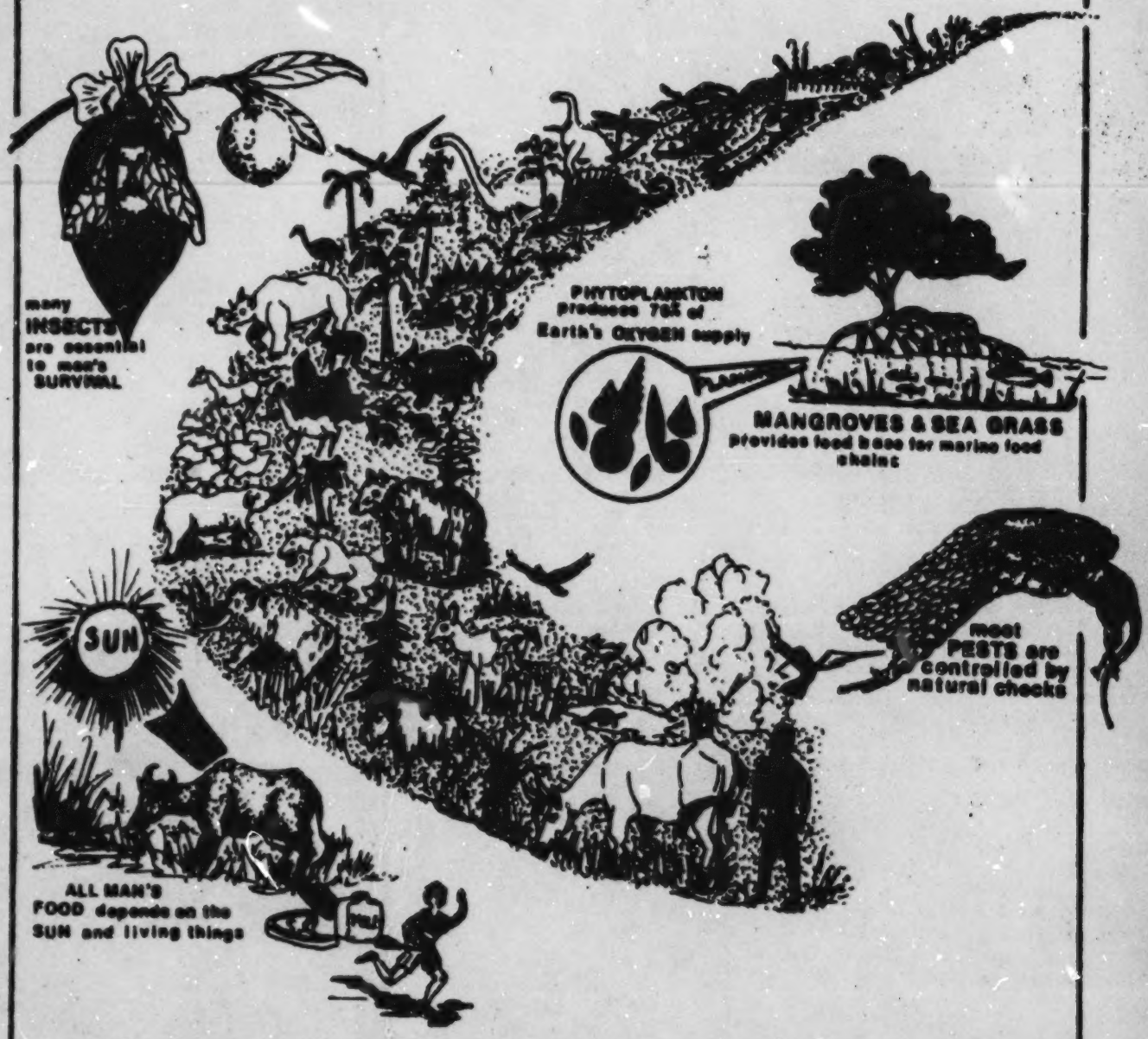
The activities following each concept are meant to be stimulators and frequently are not written in detail. Use the activities as idea suggestions and points of departure for further work relating to that concept.

Some of the activities refer to Matthew Brennan's Series entitled People and Their Environment. You should obtain a copy of these guides, if at all possible.

Hopefully, you will have an opportunity to cover each concept with at least one activity and, in this way, the student will have the whole package at the end of the school year. The guide was not written with the intent that you use every activity, but rather to give you a choice of activities for each concept. Since the guide itself is not sequenced, you do not have to do the first activities before you do the last. Feel free to enter the guide on any page and begin working. The intention is not to make these activities a separate environmental education program, but rather to blend them into your daily reading, arithmetic and writing activities.

CONCEPTUAL SCHEME I

All living things including man are interrelated and, therefore, are also interdependent.


many INSECTS are essential to man's SURVIVAL
PHYTOPLANKTON produces 70% of Earth's OXYGEN supply
MANGROVES & SEA GRASS provides food base for marine food chains
SUN
most PESTS are controlled by natural checks
ALL MAN'S FOOD depends on the SUN and living things

This concept is probably the most difficult idea for modern man to comprehend. Technology has removed modern man from his daily contact with the sun, land, plants, animals, and his concrete realization that he depends on them for survival.

When is the last time you thought of the insect that pollinated the orange blossom that enabled you to drink orange juice, or the plant that provided the food and oxygen for the cow that provided milk or hamburger for you?

The interrelationships man has with other living things is an all encompassing, interdependent web upon which the survival of all living things depend.

CONCEPTUAL SCHEME I

All living things, including man, are interrelated and, therefore, are also interdependent.

The interrelationship of all living things to one another has been a basic assumption derived from the biological study of genetics, evolution and social behavior since man began to write down his observations in the form of recorded history.

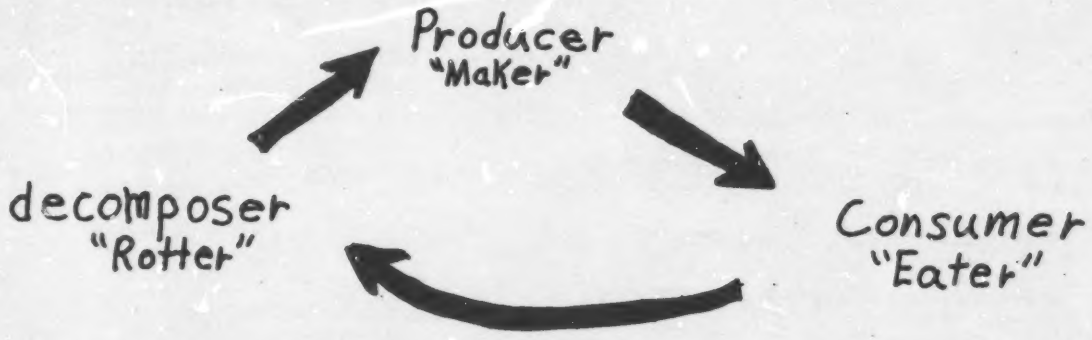
Biologists can show, too, that living things are not just interrelated, but they are also interdependent.

An analogy might be seen in the web of the fisherman's net. Each mesh is interrelated to those about it and dependent upon others for the support and strength necessary for efficient use in catching fish. If meshes are cut or broken, their loss fails not only themselves, but those that surround them. A point is finally reached when too many meshes are broken and the net can no longer serve its function of catching fish.

So it is in the ecosystem, the system of life, when too many species become extinct, or too many forests, marshes or mangroves are removed, or too much pollution is produced, hindering the living links, the ecosystem is made less efficient or stable, and ultimately runs the risk of breaking down. Remember, man is only one of the meshes in the net, and, while he has the ability to do some repair work, he alone cannot control the workings of the net.

Concept A

Producers, consumers and decomposers are necessary to keep the environment in correct balance. They need each other to survive.



Activity 1

The following activity will take a few days in order to adequately provide activities relating to the concept of producers, consumers and decomposers or makers, eaters and rotters. Many of the activities can be done in conjunction with your Art classes.

Have a variety of green plants on display. Observe and discuss the similarities of each plant. Comment on the color and structure of the plant (leaves, stems, roots, etc.).

Discuss green plants as makers of food (producers). Have the children collect pictures of green vegetables. They can clip excellent pictures from packages of frozen vegetables and dinners or cans of vegetables. Cut the pictures and paste them on cardboard to make mobiles for the science corner. Label these as "makers".

Discuss people, animals and insects as consumers or eaters of green plants. Have a large piece of paper suitable for a mural on the side wall. Cut and paste animals on one section, insects on another, and people on another. Have the children cut out or draw pictures of green plants eaten by animals,

people or insects. Paste these pictures on the proper section of the mural. If a plant is eaten by two or more groups, the connection can be made by attaching the food to the eaters with colored yarn.

Make a mobile of eaters. Have the children draw or cut out pictures of animals, people, insects, birds, reptiles, fish, etc., and paste them on cardboard to make a mobile for the science corner. Coat hangers can be used for the cross pieces. Label these as "eaters".

Discuss the balance in nature.

--Are there more plants or more people? (More plants)

--If there were more people than plants, what would happen? (People would starve.)

--What happens to the plants that are left over? (Reproduce)

--Discuss the idea that dead plants decay.
(Their leaves or fruits rot or decompose and go into the soil to help other plants grow. Small organisms (bacteria, fungi, etc.) decompose the dead plants. These small organisms could be called rotters or decomposers.)

Draw pictures of fruit that is beginning to decay. (e.g. bananas, apples, oranges) Cut and paste these pictures on cardboard. Let a few leaves dry out and paste them on cardboard. Do the same with seeds. Make a mobile of these rotters and hang it in the science corner. Label this mobile"rotters"or decomposers. Children can observe the three finished mobiles.

--Review and summarize the concept of makers, eaters and rotters.

Activity 2

Bring to school a bird feeder (a simple feeder can be made by cutting a "U" shape in the front and back of a gallon bleach or milk container and hanging it by string around the handle to a tree or pole stuck in the ground).

Let all the children look at and touch the bird feeder. Place the seeds in the bottom of the feeder and hang it outside so the children

can observe the birds that feed.

--Use only sunflower seeds until the students have noticed the kinds of birds that come. What type of birds come to the feeder? Why do birds come to the feeder? Where would they get food if we didn't have the feeder?

--Have the children observe birds near their homes and observe what these birds eat.

--Change to mixed seeds for a period of time, and ask the same questions as above.

--Where do the seeds come from?

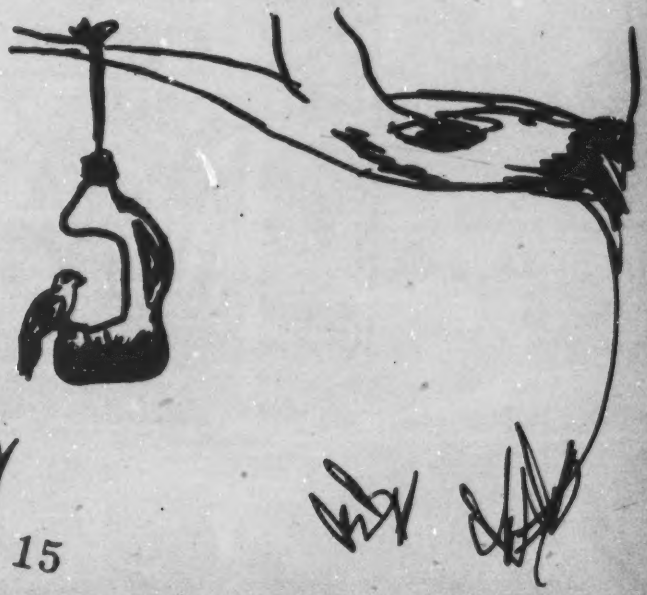
--What happens to the food after the birds eat it?

--Is the grass any greener around the feeder?

--Does more grass grow around the feeder than at a place where there isn't a feeder? Weeds?

--Make a chart showing the different birds arriving at the feeder and on what days they arrived; what time of day they arrived; how many times a day they came (are they like us--3 meals?).

--Have books with pictures of birds available so the children can more easily identify the birds.



— Activity 3

Set up a terrarium as described in Matthew J. Brennan's book, People and Their Environment. Grades 1, 2, 3, Lesson 7, pp. 22-23.

Children can observe.

--What would happen if there were too much or too little water?

--What would happen if there were too many or too few of a certain insect?

--What would happen if there were a large decrease in the amount of sunlight?

--How would these questions affect your own world?

--What would happen to you if there were too many flies and not enough spiders and birds?

--What effect does a cover on the terrarium have?

Film, Terrarium Classroom Science
#635-2-001

Concept B

Plants need certain things from their environment to grow.

Activity 1

This activity is suggested to help the children to come to the realization that all plants need the sun, water and good soil in order to grow into healthy plants.

Discussion: Film, What Plants need for Growth #581-02-007

--What do plants need to grow?

(Let the children tell the experiences they have had in watching plants grow. Show pictures of people caring for plants, watering and preparing the soil.)

Have the children place a sponge on a plate and let them sprinkle it with bird seed. Lay a piece of plastic over the sponge and watch the seeds germinate. Now, divide the class into 3 groups. Give each group two cartons or containers of soil, some water and a handful of unknown seeds. The teacher will have her own container of grass seed. Tell the children that these seeds will grow into a green plant. Be sure the plants have

sufficient water but not an excess. Let the soil dry before re-watering. As the seeds begin to grow into grass, see which group first recognizes what kind of plant is growing. Set the containers of grass on a low table in the sunlight where they can be easily examined by the children. Have a child in each group clip a blade of new grass each day, and scotch tape it to a chart where the growth of the plants in each group can be measured and compared. As the children continue to water their plants each day, the teacher will cut down the supply of water to her plant until the soil becomes very dry. Have the children observe the difference as the water is cut off from the teacher's plant. Now have the children experiment with their plants. Group 1 will label their two plants sun and no sun. The no sun plant may be placed in a dark room or closet. Group 2 will label their plants water and no water. The water supply will be cut off from the no water plant. Group 3 will label their plants soil and sterile sand. This group will transplant one plant into sand that has been washed and rinsed. Each group can observe the difference in their two plants. After a few days have one child from each group make a report on the progress of both plants. Have the children learn the parts of a plant - root, stem, leaves. Observe that broader leaves are supported by a thicker stem. Why? Have the children collect leaves from around the school. Observe the width of the different leaves.

--Can you find the veins in these leaves?

--What are these veins used for?

A climax to this activity would be to have the children draw a picture of a plant with the three essential ingredients. Use yellow, blue and brown construction paper to cut out the sun, water and good soil. Paste and label these on the picture of the plant.

Activity 2

Matthew Brennan's book, People and Their Environment, Grades 1, 2, 3, Lesson 11, pp. 29-30, has some good ideas on the effect of light on plants.

Activity 3

A trip around the school yard to observe different wildflowers, trees, shrubs, etc. would be beneficial. Have the children draw the one they liked best. Always ask what the plant needs to keep healthy.

Activity 4

--What happens if our environment is destroyed?

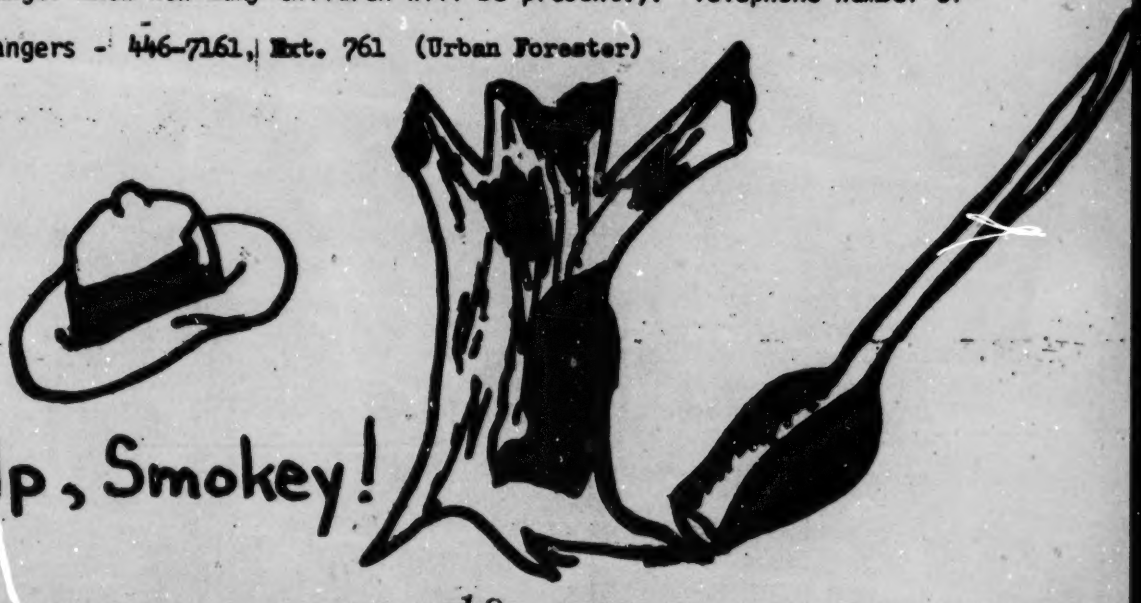
Movies available from the Department of Forestry:

"Voice of the Forest"

"Smokey and His Forest Friends"

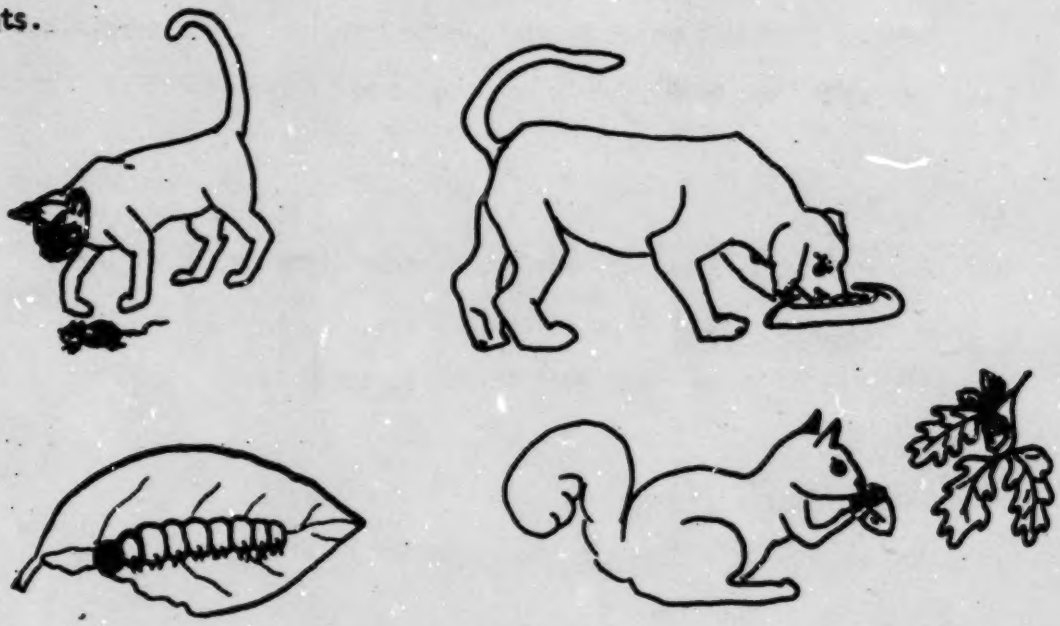
"Snuffy - Smokey Bear's Pal"

A forest ranger in a Smokey the Bear costume can come into the classroom and speak (always call at least two weeks ahead to arrange a date and time; call the week of the talk to confirm the date and time; let the ranger know how many children will be present.). Telephone number of Rangers - 446-7161, Ext. 761 (Urban Forester)



Concept C

Animals must obtain their food material by feeding on other animals and plants.



Activity 1

The following activity is suggested in order to give students a keener awareness of the various animals with which they are familiar and the food they eat.

Ask children if they have pets at home. How many have dogs for pets? How many have cats, birds, hamsters, gerbels, turtles, horses? Form animal groups whereby each child is free to discuss the animal he knows or likes the best. Have the following questions ready so the children will be able to hold discussions and come up with some information:

--What does your pet eat?

--How many times a day does it eat?

--Does it have special eating habits? (e.g. raccoon)

--Does it store away food? (squirrel)

--Do some animals eat other animals? (snake)

--Does it store food or water in its body? (birds, camels)

--How many animals that feed on green plants drink water when they eat? (Most drink some water but gerbels get almost all the water they need from the food they eat.)

--How are some animals equipped to get their own food? (Sharp teeth, strong sharp claws, sticky tongues)

--What kinds of foods are contained in pet food cans and boxes? (Check the boxes and cans.)

--After the discussion is ended have one child from each group report the information that was brought out. Others may prompt him if he forgets.

The children may now be directed to either bring in pictures of pet and animal foods from magazines, books, cat and dog food containers, or they may draw and cut out animals and their corresponding food from construction paper. These can be pasted on large Art paper and labeled.

(e.g. bird - seed
rabbit - lettuce
grasshopper - grass
cat - fish
dog - meat
snake - rat)

This activity may be incorporated into an Art and Manuscript printing lesson where the student draws and labels the animals and the foods they eat.

Film, We get Food from Plants and Animals #641-01-002

Activity 2

Matthew Brennan's People and Their Environment, Grades 1, 2, 3, Lesson 12, p. 31., "Plants for Food".

Make a chart listing the animal eaters, plant eaters and those that eat both.

Activity 3

If possible, observe an animal in the classroom to see what it will eat.

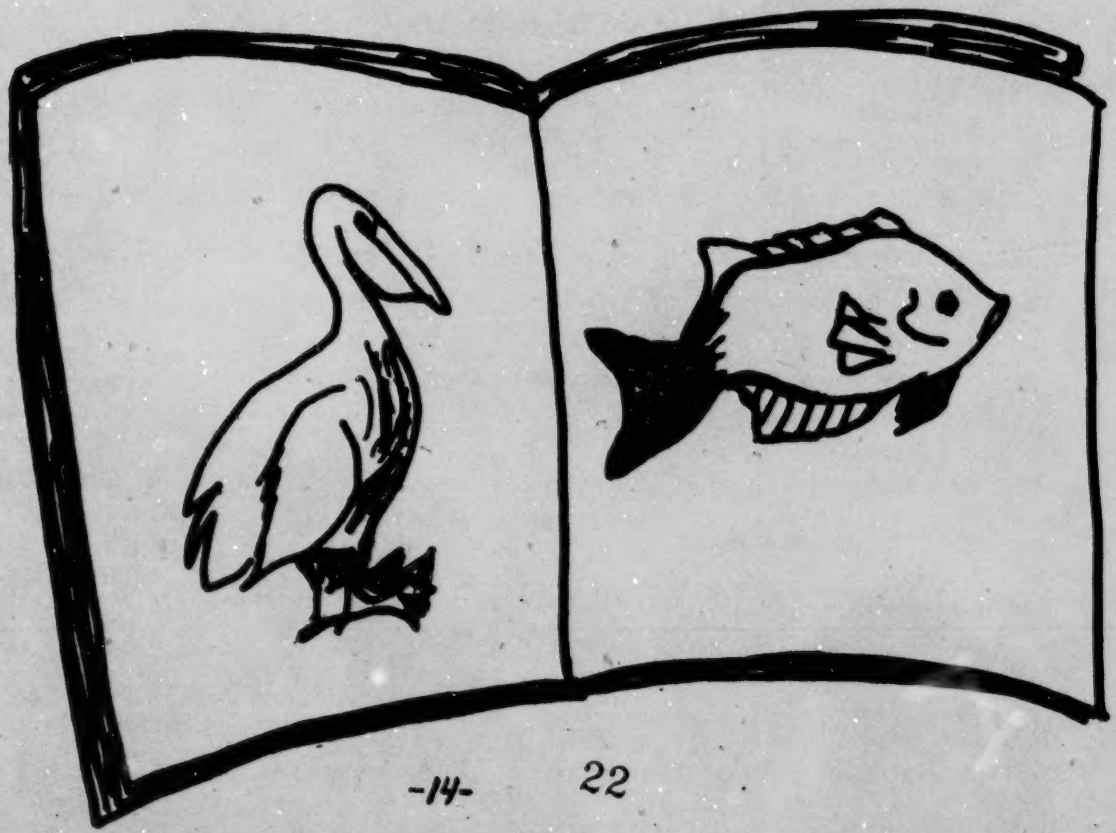
Example: Grasshopper in a jar with grass and some other insects. After the animal has been observed take him back to where he was found.

Activity 4

Have the children act out certain animals (not talking) and show how and what the animal (they chose) eats. The other children guess what kind of animal he is and what he is eating until they get the correct answer. The child who guesses correctly then gets to be the next "animal".

Activity 5

Have the class make an animal book. On one page have the picture of an animal and on the opposite page either find a picture or draw a picture of what the animal eats.



Activity 6

The class could set up a glass aquarium.

Procedure: Scrub the tank with clean hot water, add some vinegar and rinse well. Line the bottom of the tank with 2 inches of washed gravel. Lay wrapping paper over the gravel and pour water until 2/3 full, then remove the paper. Place clean rocks in the tank. Obtain water plants, rinse them and push the roots into the gravel to a depth of 1 inch. Place paper on water surface and fill the tank. Wait 24 hours to allow the chlorine to evaporate. Before adding fish, equalize the temperature between the water in the aquarium and the water the fish are in. This can be done by floating the container holding the fish in the aquarium for 15-30 minutes. Allow the fish to swim out. Abrupt temperature changes usually increase susceptibility to disease. Cover the tank with saran or glass to prevent evaporation and to keep fish from jumping out. Choose fish that get along well; guppies are good for beginners. You may wish a natural aquarium.

Things to watch for:

a) plants and algae

b) fish eating, when, how much

c) fish eating other fish

d) fish eating plants

e) snails eating

Activity 7

Have the class make a bulletin board display of a fish's food chain. Start with what big fish eat, what those smaller fish eat, then what the very small fish and micro-organisms eat.

Activity 8

Have the class make an animal book. On one page have a picture of an animal and on the opposite page have the students draw what they eat. Color the pages. (Be sure to include man.)

Activity 9

Teach the song: <u>There Was An Old Lady</u>.

I know an old lady who swallowed a fly, I don't know why she swallowed a fly! I guess she'll die!

I know an old lady who swallowed a spider. That wriggled and wriggled and tickled inside her. She swallowed the spider to catch the fly, but I don't know why she swallowed the fly! I guess she'll die!

I know an old lady who swallowed a snake. Now what do you think of a lady who swallowed a snake to catch a spider to catch a fly but I don't know why she swallowed the fly! I guess she'll die!

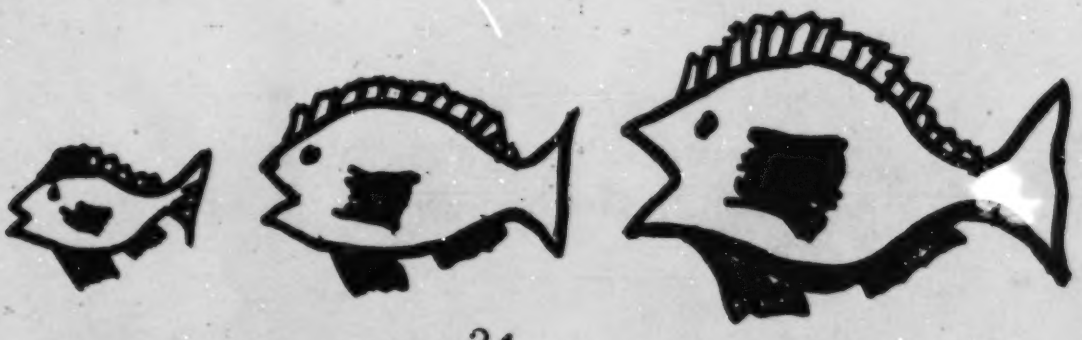
I know an old lady who swallowed a hawk. Then she couldn't talk!

<u>The End</u>!

The class could also draw a picture of each animal catching the other.

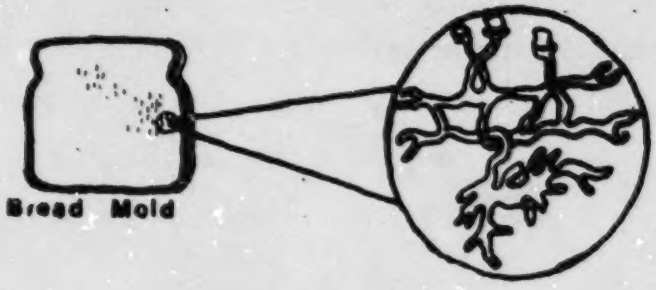
Activity 10

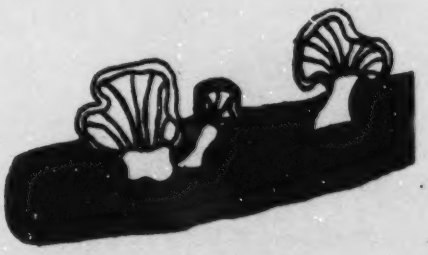
Have the class draw pictures of fish eating smaller fish, birds catching insects, spider webs with flies in them. Be sure to discuss the idea that some animals need this food and they must be able to kill it before they can eat.



Concept D

Living micro-organisms and fungi help decompose organic matter.





Activity 1

This activity will help children become aware of the concept that all living things must die and decompose in order for new things to grow. Have on display a bowl of fresh fruit containing apples, oranges, grapes, bananas, etc. Also have on display a plate with fresh bread, lettuce and bacon. Children can see and observe how good they look. Have them feel and smell the fruit, bread and bacon. Now bring out a bowl of over-ripe bananas, apples and oranges. Let the children compare the two bowls. Have them observe the rot or mold on the apples and oranges in the second bowl. Now bring out a second plate containing bread and bacon that has begun to mold (to hasten mold, take Kleenex and gather dust on it, place the Kleenex in a small container of water, shake it and pour a little of the water on the bread; cover the plate with saran wrap.). Have the children observe the lettuce that has begun to rot. Compare the two plates

and prepare a discussion:

--What happens to an orange that you keep too long?
(Show the "old" orange; touch it, smell it. This orange is beginning to rot or decompose. Mold is forming.)

--Observe the good apples. Now place the "old" apples in the same bowl against one of the good apples. What would happen to the good apple if the rotten ones were left there? (It, too, would rot.) What would happen if we mixed all the good fruit with the rotten or moldy fruit? (It would all rot.)

--What would happen if things never went bad or began to rot?
(All dead things would pile up. Eventually no new life could form because all the materials for life would be tied up in dead things.)

--When plants rot, what happens to the soil? (It becomes enriched with nutrients plants need for growth.)

--Once fruit gets rotten, would it help to plant it in a garden to help things grow better? (Yes)

Children may now be directed to draw or cut out pictures of fruit and paste them side by side on Art paper. Label the good fruit and label the rotten fruit.

--Reinforce the cycle of maker ⟶ eater ⟶ rotter.

Activity 2

Have an experiment set up with three jars; one with bananas, one with bread and one with a lima bean seed. Drop one tablespoon of water in each jar. Place tops on each and observe what happens. The top should have one small hole in it.

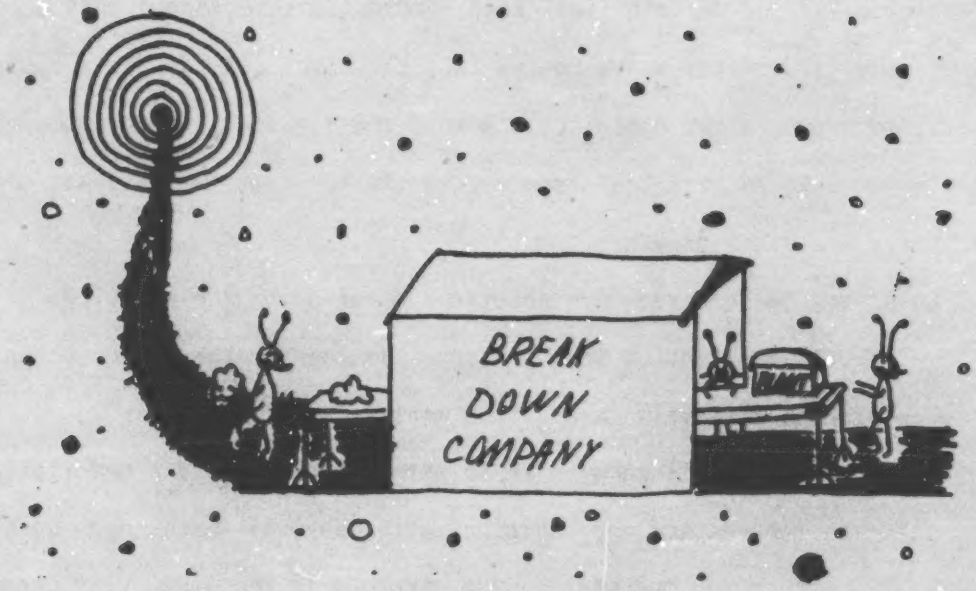
--What is growing on the objects?

--What color is it?

--What is it doing to the object?

--What will happen to the objects when they are covered with the fungi?

--What would happen if nothing decomposed?



Activity 3

Make a soil factory. Obtain a one gallon jar with a lid. Punch one small hole in the jar lid to allow air to move in and out while minimizing water loss from the jar. Have the students gather some leaves and small twigs. (Some leaves don't decompose very rapidly and should be avoided. These leaves would include cuban laurel and other figs.) Have them also gather a handful of partially decomposed leaves. Place the partially decomposed leaves in the bottom of the jar and fill the jar to the halfway mark with the students' leaves and twigs. Pack the leaves in the jar loosely and add enough water so that the leaves are moist but not so much water that you have standing water in the bottom of the jar. If the season is right, have your students try to find ripe mushrooms that they can tap over the leaves to introduce mushrooms spores. You may add the spores at any time. If mushrooms are unavail-

able, this step is not necessary. Now cover the jar and store it away from light as much as possible while keeping it in a location where the students can see it from time to time. Have your students pictorally and descriptively keep records on the changes that occur in the jar. After a few months take the cover off the jar and plant a few seeds in the container. Remove the jar lid, and move the container into an area that receives sunlight. Have the students observe the plant growth.

Questions to be asked throughout the duration of the activity:

--Draw their attention to the changes in the jar through questions spaced at intervals through the months.

--Have the students compare their original drawings and descriptions to the contents of the container after several months have gone by. What has caused the changes you observed in the jar? What happened to the leaves? (Microorganisms decomposed them.)

--Is this decomposition important to the soil? (Yes) What would happen if decomposition didn't occur? (Dead things would pile up everywhere.)

--What did the decaying leaves provide to the plant you grew in the jar? (Nutrients)

--Does the same thing happen to leaves that fall on the ground outside? (Go look.)

--This decayed leaf litter forms what is called humus. How is humus important to soil? (Provides nutrients, holds water, etc.)

Activity 4

The micro-organisms and fungi are the garbage men of the world.

--What would happen if our garbage men stopped picking up garbage and no one came by to get rid of it?

--What would happen in the forests if animals died and leaves died and there was nothing to get rid of them?

Concept E

Man lives in communities, each community consisting of an interacting assortment of individuals providing different kinds of services.

Activity 1

Children can assume the roles of different community helpers. Leave one helper out and see what effect his absence has on the community. Different helpers can be left out to see the major roles they play and how the whole community is affected when they are gone.

Activity 2.

Take a field trip to any of the places in town where a community service is performed. (Police Department, Post Office, Fire Department, etc.)

Activity 3

Use the films listed.

"Everyone Helps In a Community" 301-2-013

"Farmer Don and the City" 301-1-001

"Big People - Little People" 301-1-037

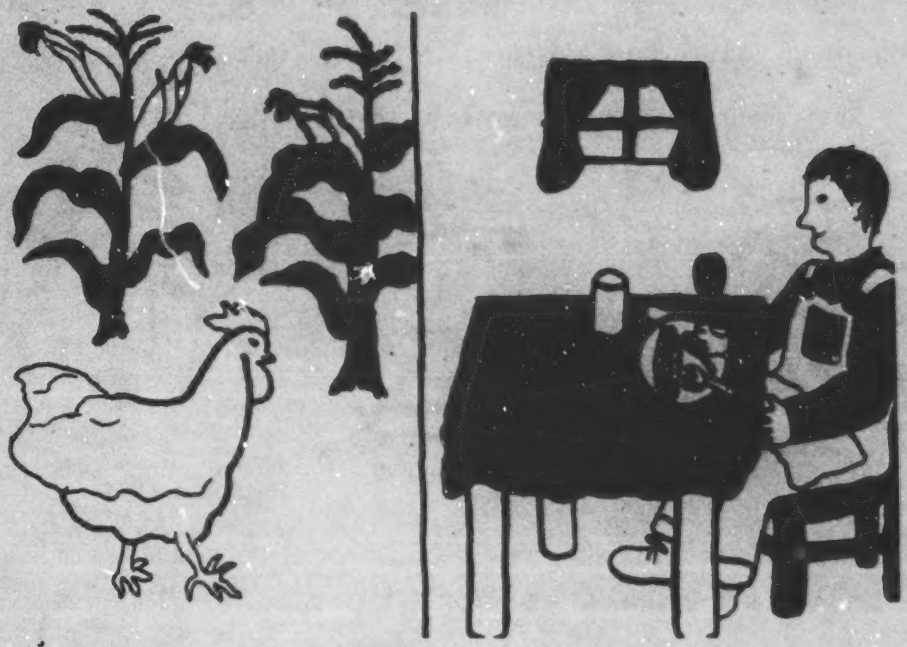
Activity 4

Study an ant farm

--How do ants help each other?

Concept F

Man needs plants and animals for survival.



Activity 1

This activity will help the students become aware of their needs for food and clothing in order to stay alive. The activity can be incorporated into the schedule as either an Art or Manuscript Printing Lesson. Have the children recall any of the food they have eaten today during breakfast, snack or lunch.

--Can you think of something you ate or drank that came from an animal? (Milk-cow, meat-chicken)

--What came from a plant? (Bread-wheat; corn, beans-stalk plant; orange juice-orange tree, etc.)

--Think of what it would be like if we couldn't get out of this classroom for a whole week.

Now let's observe and feel the clothes you are wearing.

--Where does it come from before it gets to the stores? (Cotton, wool or synthetics)

--Does it just grow this way? (No, people make it into clothes.)

--What did your clothes (shirt, dress, shoes, socks) look like before they were made into clothes?

--Where did your shoes come from? (Hides and skins of animals)

--What about your leather belts? (Animal hides)

--Where do cotton dresses and shirts come from? (Cotton plant)

--Where do woolen dresses, pants and socks come from? (Wool from sheep)

After the discussion, an Art lesson based on categories of food and clothes and where they come from may follow. The students may cut out pictures of food, clothes, animals, and plants. Old magazines and coloring books could be used. They can match and label the pictures on Art paper. If magazines or books are not available, they may draw pictures of the food and clothing they need, and the plant or animal from which it came. These can be labeled and connected with matching lines. This activity could also be transformed into a guessing game whereby the leader calls out an article of clothing or something to eat and another child is called on to tell from where it came. The child giving the correct answer becomes the leader.

Activity 2

Matthew Brennan's People and Their Environment, Grades 1, 2, 3, Lesson 12, pp. 31-34, "Plants for Clothing".

Activity 3

Pretend you're lost on an island.

--What do you need to survive? (Food, water, shelter)

--What do your requirements come from - animal or plant?

--Compare what you needed on the island with what you use at home.

--How much of what you have can you get along without?

Activity 4

Have each member of the class bring in a label from a can of food he ate. Make one big collage. As a child identifies where his food came from he can paste his label on the collage.

Activity 5

Using your school lunch menu, have the class decide what they ate that came from a plant. Examples: hamburger (cow ate grass)
french fries (potatoes)
onion
milk (cow ate grass)
bun (wheat, grain)

--Could you have eaten lunch today if the world did not have plants?

Activity 6

You can trace the favorite foods of children back to plants as described by Matthew J. Brennan in his book People and Their Environment - Teacher's Curriculum Guide to Conservation Education, Lesson 12, pp. 31-32.

Activity 7

Use Matthew Brennan's People and Their Environment - Teacher's Curriculum Guide to Conservation Education, Lesson 25, pp. 63-64, to show interaction of living things.

Films: We Get Food From Plants and Animals #641-1-002
Cotton Farmer # 633-2-001
Clothes We Wear # 677-1-001

CONCEPTUAL SCHEME II

Heredity and environment interact to determine the characteristics of an organism and, therefore, a population.

When environments change living things must adapt, move or die.
ESTUARIES ONCE CHANGED BECOME CHANGED FOREVER WHY?
Pelican is not able to adapt to pesticides and may become extinct
GENETIC CHANGE CANNOT KEEP PACE WITH MAN INDUCED ENVIRONMENTAL CHANGE
drugs are one way man attempts to adapt to a hostile environment
natural areas provide relief from urban stress
broken arm heals
plants bend toward the light

CONCEPTUAL SCHEME II

Heredity and environment interact to determine the characteristics of an organism and therefore a population.

Why are you the way you are or a toad the way he is? As organisms developed in Earth history, their physical and behavioral characteristics were passed from one generation to another by genes through a system we have come to call the hereditary process.

The environment plays a major role in shaping the hereditary character of any population by sorting out those least fit to adapt to the prevailing environment. An organism whose genetic make-up does not allow it to live, feed, reproduce, or compete with others in the environment, will not be able to pass its genetic characteristics to a future generation.

On the other hand, animals and plants may alter the environment of an area to such an extent that the prevailing environment is changed, thereby, ultimately reshaping the hereditary characteristics of those who live there. Thus, heredity and environment are closely interrelated.

Concept 7

Living things can be grouped according to similarities and differences.

Activity 1

Take the children outside and divide them into groups of 4. Have each group collect 10 things. Go back to the classroom and let the students sort their objects into piles in each of the following ways:

Classification #1	Big	Small		
Classification #2	Heavy	Light		
Classification #3	Living	Dead		
Classification #4	Fuzzy	Prickly	Rough	Smooth
Classification #5	Let them make their own piles by color this time.			

Activity 2

Have each child draw a picture of himself and then exchange the picture with a friend. They are to see how they are alike and how they are different from their friends.

Activity 3

Make a chart of heights and weights of the whole class at the beginning middle, and end of the year. Let the children discuss how they have changed in height and weight.

Activity 4

Tape each child's voice at the beginning of the year.

--Is it the same as their classmates?

Activity 5

Show the films from the county media center.

"The Cow" 636-1-011

"Pigs" 636-2-004

Compare the animals in these two films.

CONCEPTUAL SCHEME III

Living things and environments are in a continuous state of change.

CONCEPTUAL SCHEME III

Living things and environments are in a continuous state of change.

All living things and environments are involved in natural changes which we call cycles. These cycles may be growth, reproduction or other aspects of the life cycles characteristic of the natural world. Some changes may be of a non-biological nature. Since nothing on earth is static in its make-up, location or relationship to other things, a mere passage of time marks change in environmental systems, whether it be life or death in a food web, or uranium decaying to lead.

Concept A

As living things grow they change.

Film, Tad the Frog #597-1-012

Activity 1

The following activity may be incorporated into the Art and Mathematics schedules and should demonstrate change due to growth.

Discuss the fact that all living things around us grow. Nothing that is living stays the same.

--Did the seeds that we planted stay the same? (No)

--Did the plant stop growing? What happens to small trees? (Keep growing)

--What happens to the orange blossoms? (Give rise to an orange with seeds)

--What happens to the eggs of birds, hens, snakes? (Hatch)

If possible, place a tadpole in a jar of water. Attach a picture of a frog on the jar. Explain that the tadpole will grow and change into a frog just like its mother. Have the children observe each day the change that is taking place and have an oral report on it.

Now have the children close their eyes and think about how they have changed (from a baby to a girl or boy).

--Can you think of parts of your body that change everyday?
(Hair, fingernails, toenails, weight, height)

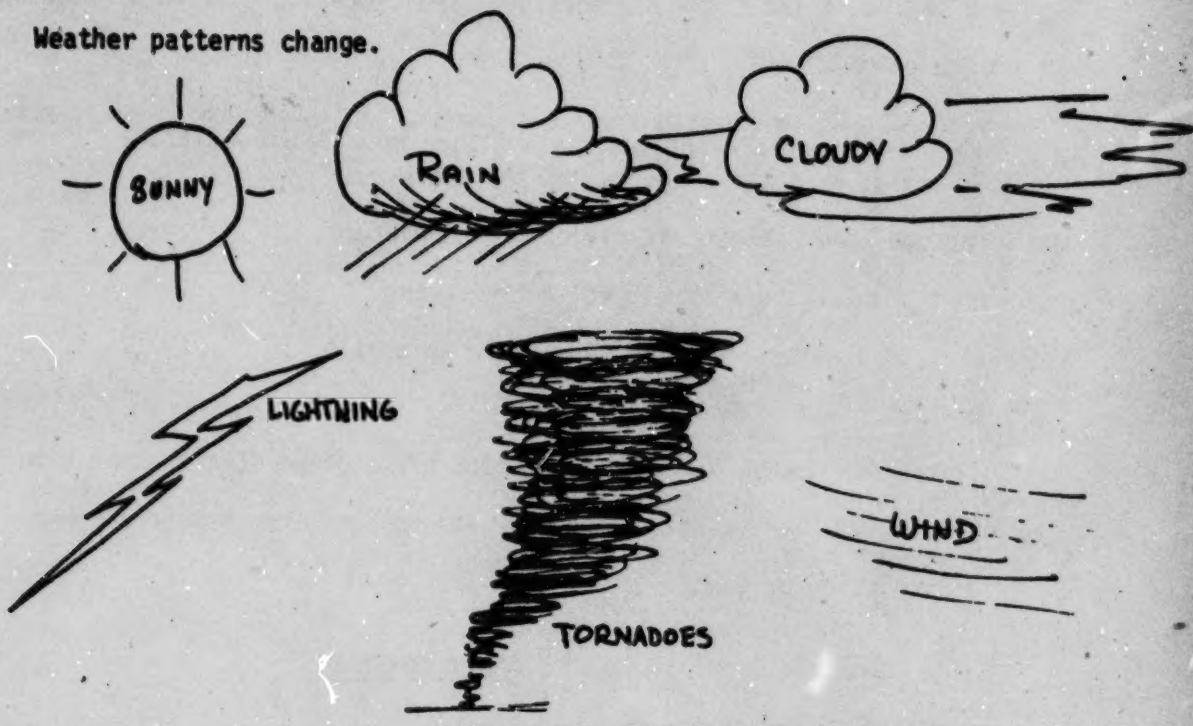
--What are you beginning to lose and then grow again? (Teeth)

Now make a chart with each child's name on it. Call it See Us Change. Attach a measuring tape or stick on the wall to measure the children. As each child is measured, he records the date and the inches beside his name. At various intervals, the child may be measured again. If the inches change, then he records the date and the new measurement. Do the same procedure with a plant. The children can observe a plant grow against a ruler or stick. By using a ruler, children may take turns recording the date and height of the plant. By using a stick, the children may take turns marking the stick with a colored marker. Let the students draw a comparison between the growth of the plant and their own growth.

Have the children bring in pictures of babies, school children, mothers and fathers, grandmothers and grandfathers. These can be photographs or pictures cut from magazines, coloring books, etc. The pictures from magazines can be pasted on large charts labeled People Change. Baby photographs can be mounted on the bulletin board beside a school picture. This can be labeled I Change.

Concept B

Weather patterns change.



Activity 1

This activity may be correlated with the Mathematics, Manuscript Printing and Art Lessons, and will enable the students to become more aware of weather and seasonal changes.

Discuss the changes in the weather; hot days, cool days, rain, snow, thunder, lightning, hurricanes, tornadoes, etc.

Now make a weather calendar and put it in a conspicuous place so it can be observed by all the students. Have the children take turns pinning on the various symbols for each day, e.g. sun for sunny day; rain drops for rainy days; clouds for cloudy days, etc. Have a large thermometer drawn and place it on the bulletin board. Attach a piece of thin red ribbon to it. Also have a regular thermometer hanging outside the classroom door. Allow the children to take turns checking the real thermometer. Then they may return and fold the ribbon to the

same degree on the drawn thermometer. The temperature is then recorded on the calendar.

Have a discussion about the various sports. Allow the children to make an association between sports and the weather.

--Who can name some sports played in the winter?

--What popular sport is played in the spring?

--What do most people do in the summer to cool off?

--What sport is played in the fall?

Children may now be directed to section off a piece of Art paper into four parts. They may label the four seasons and then draw the appropriate sport under each.

Suggested Films

1. Weather-- Why it Changes # 551-1-037
2. What Causes the Seasons #525-1-016
3. What Makes Rain # 551-1-038
4. Why the Wind Blows # 551-2-035
5. Why Seasons Change # 525-1-018
6. How Weather Helps Us # 551-1-033
7. Spring is an Adventure # 525-1-014
8. Summer is an Adventure # 525-1-015
9. Autumn is an Adventure # 525-1-002
10. Winter is an Adventure # 525-1-020

CONCEPTUAL SCHEME IV

As a population increases, its effects on the environment become more pronounced.

ENVIRONMENTAL STRESS

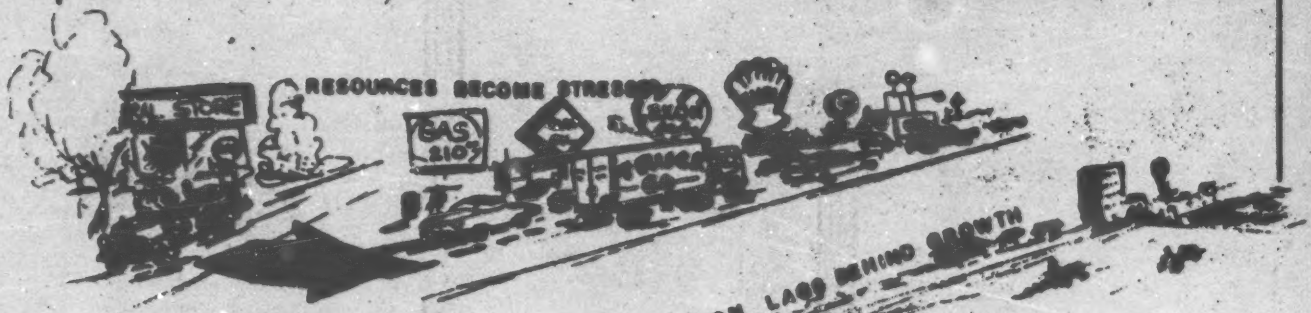
OCCURS WHEN DEMANDS ON ENVIRONMENTAL SYSTEMS RESULT FROM INCREASED POPULATION DENSITIES

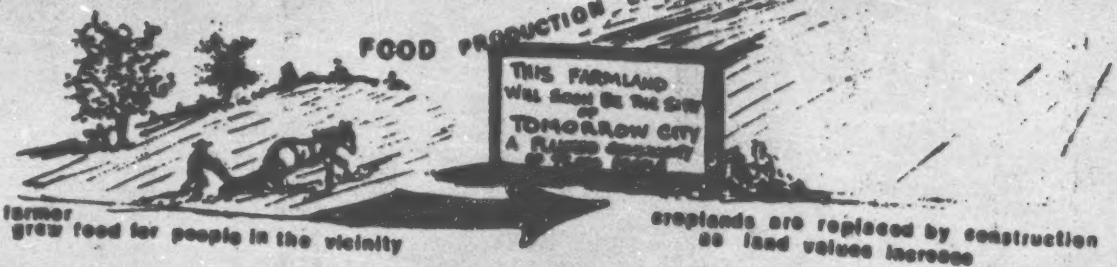
- resources become stressed
- individual freedoms & choices become limited
- living costs & taxes increase

FREEDOM OF CHOICE AND ACTION BECOME LIMITED

TERRITORIES BECOME SMALLER AND DEFINED

ALL NATURAL SYSTEMS HAVE CHECKS





farmer grew food for people in the vicinity

croplands are replaced by construction as land values increase

Increasing populations stress food supplies and resources at a faster rate than the population grows because each new generation demands a higher standard of living than its predecessor.

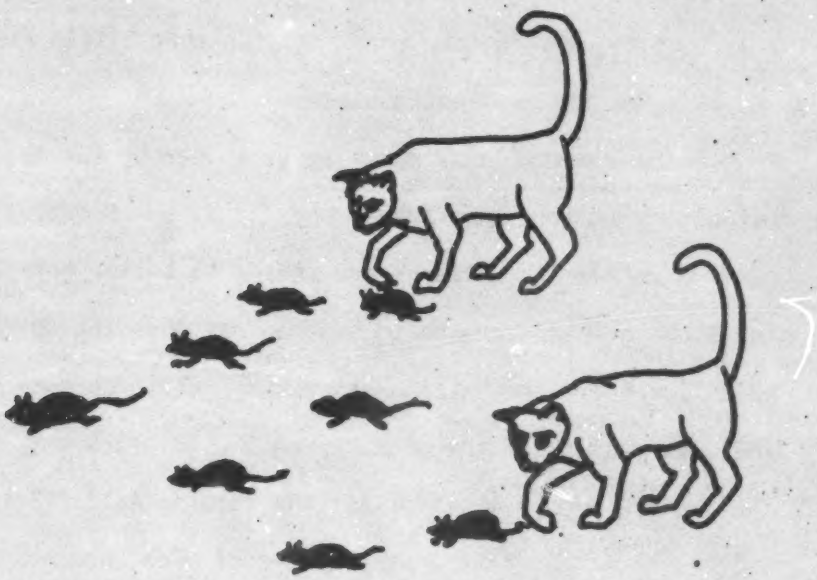
CONCEPTUAL SCHEME IV

As a population increases, its effects on the environment become more pronounced.

As a population expands it approaches a limit known as the carrying capacity of the environment. The environment is only capable of supporting a finite number of individuals and, if that capacity is exceeded, the environment will not supply the needs of the surplus individuals and they will die. When the population levels are near the carrying capacity of its environment each member of the population will have only its minimal daily requirements. This fundamental ecological principle applies to man and also to the quality life that we enjoy. Our planet has finite resources and as the population expands those resources will be distributed to individuals in ever decreasing allotments. Thus, as man's population grows, his standard of living will be reduced.

Concept A

In a healthy ecosystem, predator species are less abundant than their prey species.



Activity 1

The following activity may be incorporated into the Language Arts and Mathematics Schedules. These activities will help the children become aware of the idea that there must be more of one species in order for the other species to survive.

Plan a walk around the school grounds. Tell the children that all during the walk they are to think of what in nature there is more of:

trees or grass
flowers or bees
seeds or birds
rats or snakes
plants or rabbits
plants or people.

When the children return to the classroom have a discussion on what species of plants and animals are more numerous.

--What would happen to the rabbits if there were more rabbits than

grass or plants for them to eat? (The rabbits would starve.)

--What would happen to the birds if there were more birds than seeds for them to eat? (The birds would starve.)

--What if there were many more big fish than little fish for them to eat? (The big fish would starve.)

Proceed to a guessing or matching game whereby the teacher names an animal and a child must answer what it eats. A dramatization may follow outside whereby 20 children are chosen to be the more abundant species and 5 children are chosen to be the less abundant species. For example: 20 children are chosen to be mice and 5 children are chosen to be cats. The cats must catch the mice.

--Are there enough mice for all the cats to eat? (Yes)

--If each cat caught the same number of mice, how many mice would each cat have to eat? (Four)

Now, let's change places. This time, there are only 5 mice and 20 cats.

--Are there enough mice for all the cats to eat? (No)

--What will happen to the cats if they cannot find enough mice to eat? (The cats will starve.)

--What would happen if everywhere there were more cats than mice? (Many of the cats would starve until there were more mice than cats.)

The same dramatization may be done with the following species:

Less abundant	More abundant
bees	flowers
frogs	flies
birds	seeds
snakes	rats
rabbits	plants
big fish	little fish
lions	deer
fox	rabbits

Activity 2

Have each student draw one of the following pictures:

--Draw 10 plants.

--Draw 3 rats.

--Draw 1 snake. Is it a good snake? What will he eat? How many?

--If there were more rats could we have more snakes?

--If there were more snakes, what would happen to the rats?

--If there were more plants would there be more rats?

Activity 3

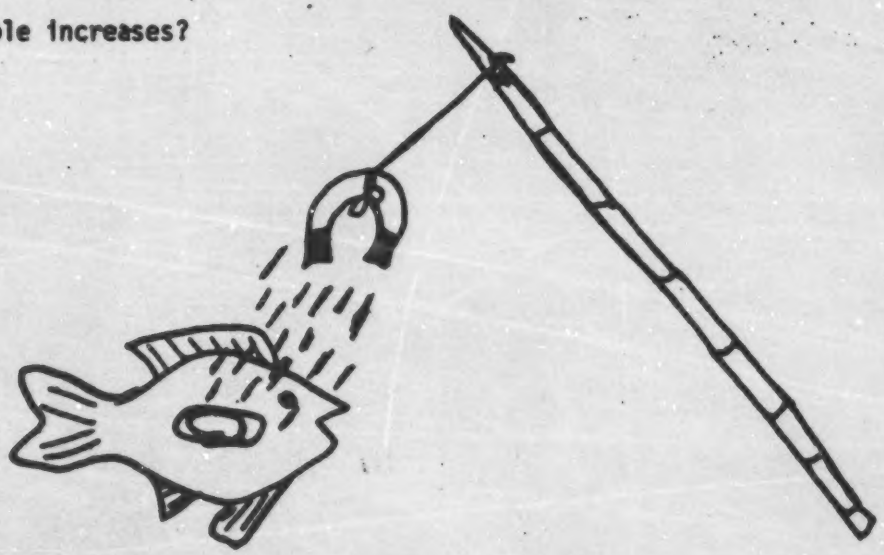
Set up a fish pond in your room. Make 30 fish out of paper. Attach a paper clip to each fish. Have 15 fishing poles with a magnet on the end of the string. Have one child fish for 2 minutes. Record how many fish he catches. Then have 15 children fish for 2 minutes and record how many fish each caught.

--Why couldn't you catch as many fish the second time?

--What would happen if fish wouldn't replenish themselves?

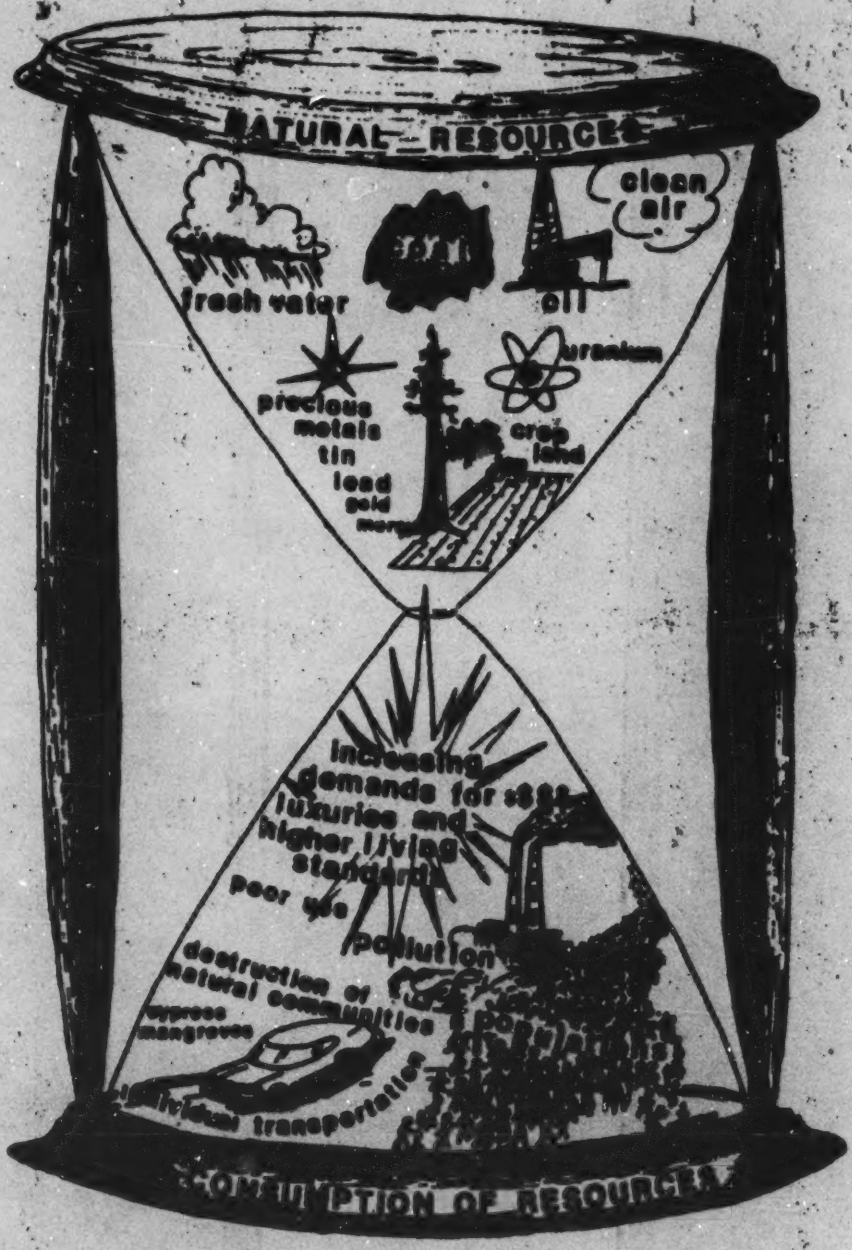
--What does this show you about population increase?

--Will there be fewer other things for each person as the number of people increases?



CONCEPTUAL SCHEME V

We live in a world of finite resources and almost infinite demands on those resources.



Resources may become finite

(a) if there is only a limited supply, e.g. oil, and we consume it;
(b) if man misuses a renewable resource, e.g. air, water, forests, soil, estuaries, fish, so that it is totally changed by pollution or misuse and no longer can renew or recycle itself to be used again by man.

CONCEPTUAL SCHEME V

We live in a world of finite resources and almost infinite demands on those resources.

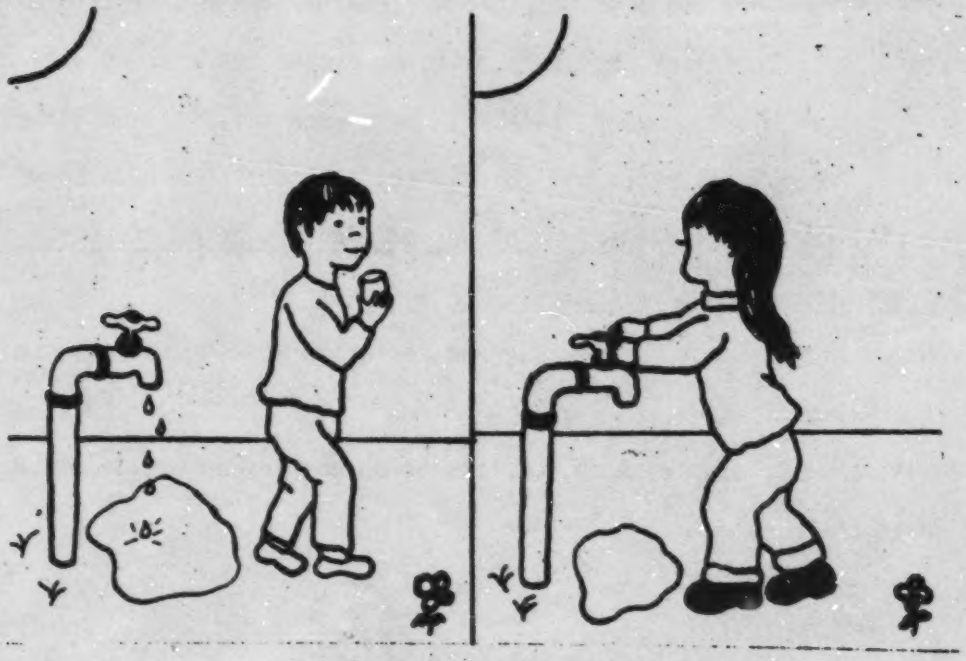
Many of our natural resources, particularly mineral resources and energy resources, are finite. There is only a limited amount; when they are gone they will never be replaced. In addition, man has made many of the world's renewable resources finite by his mismanagement of the resources.

Many of our resources which depend on cyclic patterns to replenish themselves have been altered by man. When man consumes more of a resource than nature is recycling, he upsets the cyclic pattern and produces a situation whereby the resource becomes finite. There will be a time when the resource is consumed and the cycle breaks down because it can no longer replenish itself.

We see this in many life cycles; from bacteria in our soil which convert nitrogen, carbon and sulfur to usable products, to our ever increasing endangered wildlife species and mineral and natural resources, e.g., timber and fisheries. These resources are being harvested or interfered with by man's technological needs.

Concept A

Our lives and those of future generations depend on the wise use of our natural resources.



Activity 1

These activities will help children to become aware of their responsibility to care for their own personal belongings so that younger children will grow up to enjoy the same things that they now enjoy.

The following activity may be incorporated into the Social Studies, Language Arts and Art Schedules.

Have the children take everything out of their desks. Instruct them to put their pencils, crayons, rulers, workbooks, and papers on top

of their desks, on the floor all around their desks, on their chairs, etc. The object is to have each child sitting in a very "messy" atmosphere. Now, give each child a piece of paper and instruct him to write his name in the best possible way. After the frustration of each child is observed, ask each child to figure out what he will have to do to get his best work finished. Help each child to see himself in this "messy" situation and to realize the importance of his own responsibility. Stress the idea of an individual's being responsible for his own personal belongings.

--Which kind of desk is more fun and easier to work on, a neat one or a messy one?

--What kind of classroom do you like to belong in, an untidy one or a neat one?

Much of the clothing we wear comes from the cotton of the cotton plant and wool from the sheep's coat. Other parts of our clothing like shoes, belts, etc. come from the hides of different animals. It follows that if we don't care for the clothes we have, someday there might not be enough plants and animals left to clothe everybody. Discuss the importance of caring for all our personal belongings.

Explain to the children that toys are made from plants and animals, metal, tin, and aluminum. If they do not care for their toys now, someday there may be children with no toys to play with. Discuss the importance of caring not only for their own personal belongings, but for the belongings of everyone else. An Art Lesson may follow whereby each child is asked to draw a picture of himself in his own room (or one he shares with another member of his family). Have him draw the room untidy with toys, clothes, and other personal belongings lying all around. When this drawing is completed, have each child draw a second picture showing the same room after he has straightened it. To make it more personal, the child should show himself in both drawings.

Activity 2

Water

Have the class go one day without drinking water.

--What would happen if we had no water?

Have the students, with the teacher's help, make a list of all the uses the students make of water in one day.

Have six glasses of water; put salt in one; fertilizer in one; oil in one; detergent in one; and soil in one.

--In how many glasses can we see something?

--Does it go to the bottom, top, or is it mixed in?

--Let a different child smell some water from each of the glasses and tell what it smells like.

--Have them <u>imagine</u> how each one might taste.

--How can we clean the water so we can drink it?

--Discuss how the children can help conserve water at home and school.

leaky faucets	washing cars
watering lawns	brushing teeth.

Activity 3

Minerals

List materials that are used to heat and air condition homes.

--What would happen if we ran out?

List materials used to build homes.

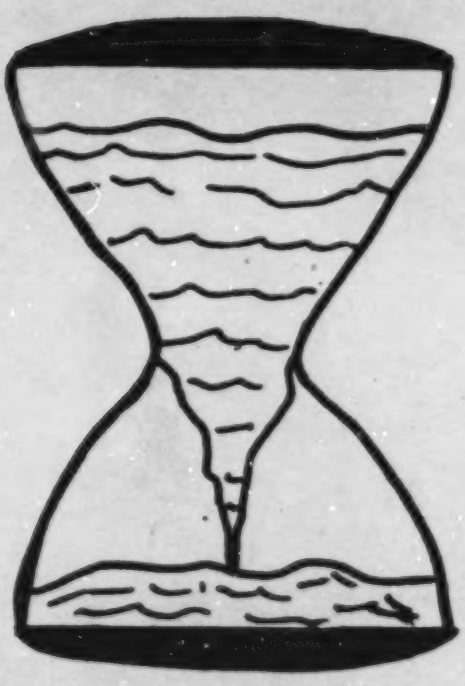
--How could we wisely use these?

Matthew Brennan's book, People and Their Environment, Grades 1, 2, 3, shows many examples of using materials wisely in Lesson 8, pp. 24-25.

Activity 4

Soil

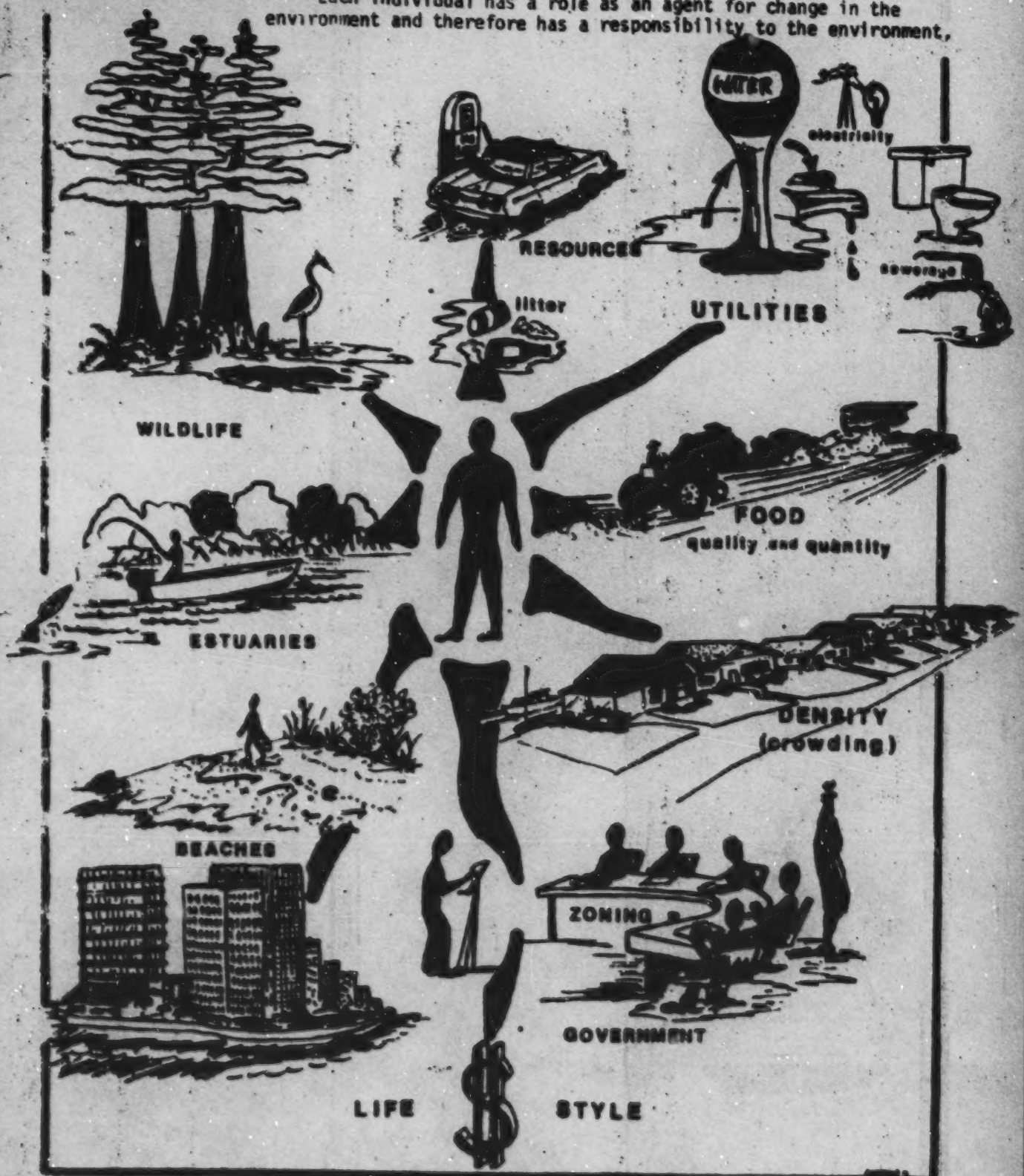
Matthew Brennan's book, People and Their Environment, Grades 1, 2, 3, has some good activities on soil in Lesson 24, pg. 58.



Save our Natural Resources. Time is running out.

CONCEPTUAL SCHEME VI

Each individual has a role as an agent for change in the environment and therefore has a responsibility to the environment.



CONCEPTUAL SCHEME VI

Each individual has a role as an agent for change in the environment and therefore has a responsibility to the environment.

Each of us, by the nature of the way we live, has an effect on the entire area which we inhabit. We have a distinct effect on our physical environment, from the food we eat to the electricity and "toys" we require; clothes we wear; litter; garbage and sewage we produce.

The more we demand in the way of man-made products, services and comforts, the more our natural environments must be changed to accommodate us. In other words, we make trades continually. To use electricity, we must pollute our environment. To promote bigger cities and more people, we must change or destroy the natural landscape and its related ecological cycles. We must realize, however, most of our trades are irreversible and we cannot trade back for what we had before. For instance, a mangrove or cypress forest, which took millions of years to develop and upon which so many ecological interrelationships depend, cannot be reestablished once man has draglined or dredged and filled it for a housing development. It cannot, even in many generations of man, be returned to the productive swamp it once was. It is, for all practical purposes, gone forever.

We must become aware of how our trades affect us before we make them. Our purpose, therefore, is to create an environmental literacy through our society and each of us as individuals can begin to make knowledgeable environmental decisions.

Concept A

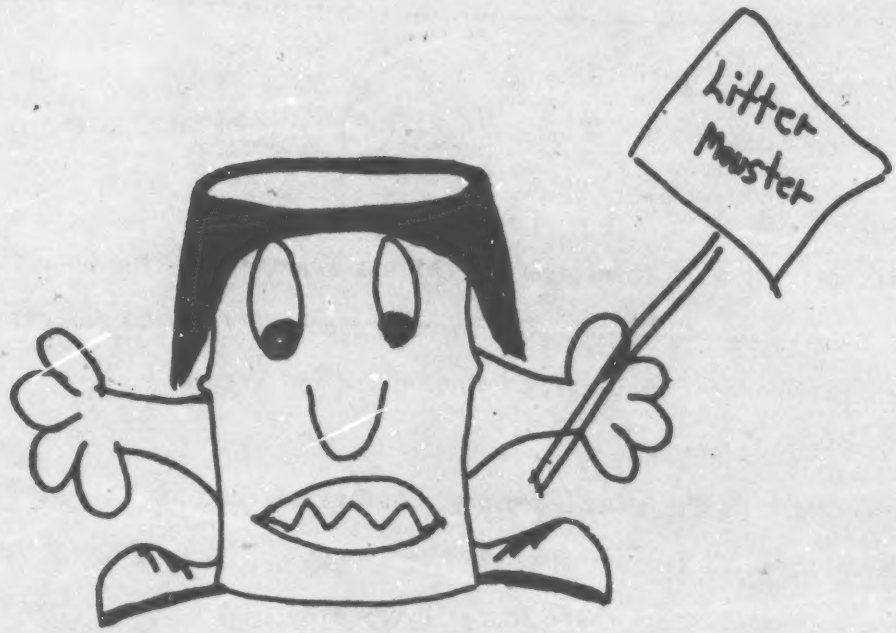
Man Changes The Environment

Activity 1

Make a list of a ll the different signs of pollution you can find around your home. Make a poster showing what you can do to help get rid of pollution.

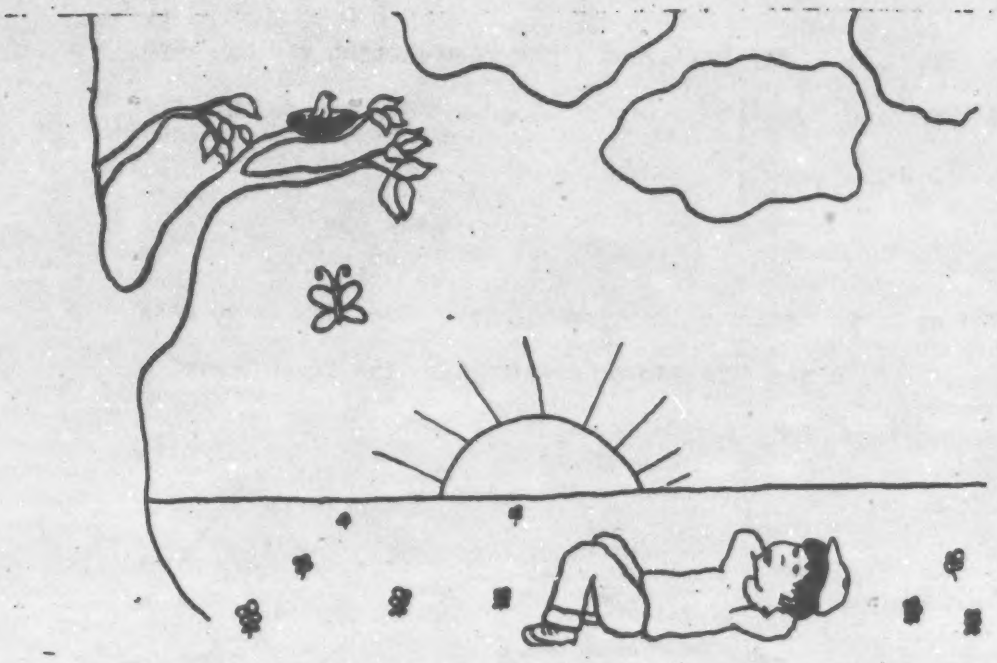
Activity 2

Have the children decorate trash containers. One idea is to make a "person" called the " Litter Monster". Give the trash barrel arms, legs, head, body etc.



Concept B

The natural environment is aesthetically pleasing.



Activity 1

This activity will reinforce the child's awareness of the beauty of our natural surroundings. The following activity may be correlated with the Science, Manuscript Printing and Art Lessons.

Plan either a trip . or a nature walk on the school grounds. Before the trip or walk remind the children to keep in mind all the things <u>not</u> made by man. Have them observe through their senses everything that they see, feel, hear, smell, or taste. Remind them of the beautiful world around them and all the things they can enjoy without having to pay for them. Their eyes, ears, nose, tongue, and hands can bring exciting adventures to them, if they just stop and think about it. When the children return to the classroom they may close their eyes while the teacher asks them to remember everything they saw with their eyes.

When the children give their responses to each of the following, the teacher will record each under the appropriate heading:

See	Hear	Feel	Smell	(Liked to have) Tasted
sky	birds	wind	flowers	water
cloud	rustling trees	leaves	grass	oranges
birds	bees	frogs	blossoms	berries
trees	wind	bugs	trees	etc.
sun	etc.	worms	etc.	
plants		plants		
flowers		trees		
soil		etc.		
ants				
grass				
etc.				

Have the children make a booklet with an appropriate title, e.g. "Enjoying Things That Are Free." Children may draw pictures under each label or they may cut pictures from magazines and paste them on colored paper under each appropriate heading.

Activity 2

Have an individual box for each of the senses. The box should be labeled clearly: touch, smell, taste, sight, or hearing. Collect materials that demonstrate the particular sense and place them in the boxes. Advise the children to obey each label. Only smell the objects in the smell box, only listen to the things in the hearing box, etc. Divide the class into five seperate groups, each sitting in a circle. Give one box to each group to explore. Have the groups rotate the boxes so that each group has had a chance to use their five senses. You could number the objects in each box. Have a worksheet with the sense named and numbers listed correspondingto the numbered objects. Next to each number have the children fill in descriptive words of the objects.

Another worksheet could list various objects and the children could fill in what sense or senses would be connected with the particular objects.

Before this activity is conducted it is suggested that the teacher discuss the senses. What are the senses? What words can we use to describe the senses? What senses do we rely on the most? (sight) How would our lives be different without our sense of sight? (books, television, no glasses, eating habits, writing) We should rely on our other senses more for information. If the children fail to bring this out in the discussion then the teacher should suggest it and let the children discuss it.

Experiment with the senses.

A. Taste: sweet, sour, salty, and bitter.

Suggested materials: sugar, sweet cookies, lemon, sour candy, salt, pretsels, quinine tablets, limes.

B. Smell: strong, medium, mild, no smell.

Suggested materials: ammonia, alcohol, cinnamon, cut fruit, uncracked nuts, soap powder, dry baking soda, water.

C. Hearing: loud, soft, high, low.

Suggested materials: bell, noise makers, whistle, toy flute, tape (cassette) with various recorded sounds.

D. Sight: distant, close, bright color, dull color, blurred, clear.

E. Touch: temperature, texture, size, weight.

Suggested materials: pans of hot and cold water, thermometer, grades of sandpaper, variety of rocks, feather, buttons.

APPENDIX "A"

Three Workbooks

The following activities can be reproduced and discussed with the children. Atest with answer key has been included. It is anticipated that the teacher will devote adequate time with discussion of the work sheets before administering the post-test.

LIVING AND NON-LIVING

Objective: Everything on earth can be classified as living and non-living. The student will be able to group things into one of the two classes when given a random selection.

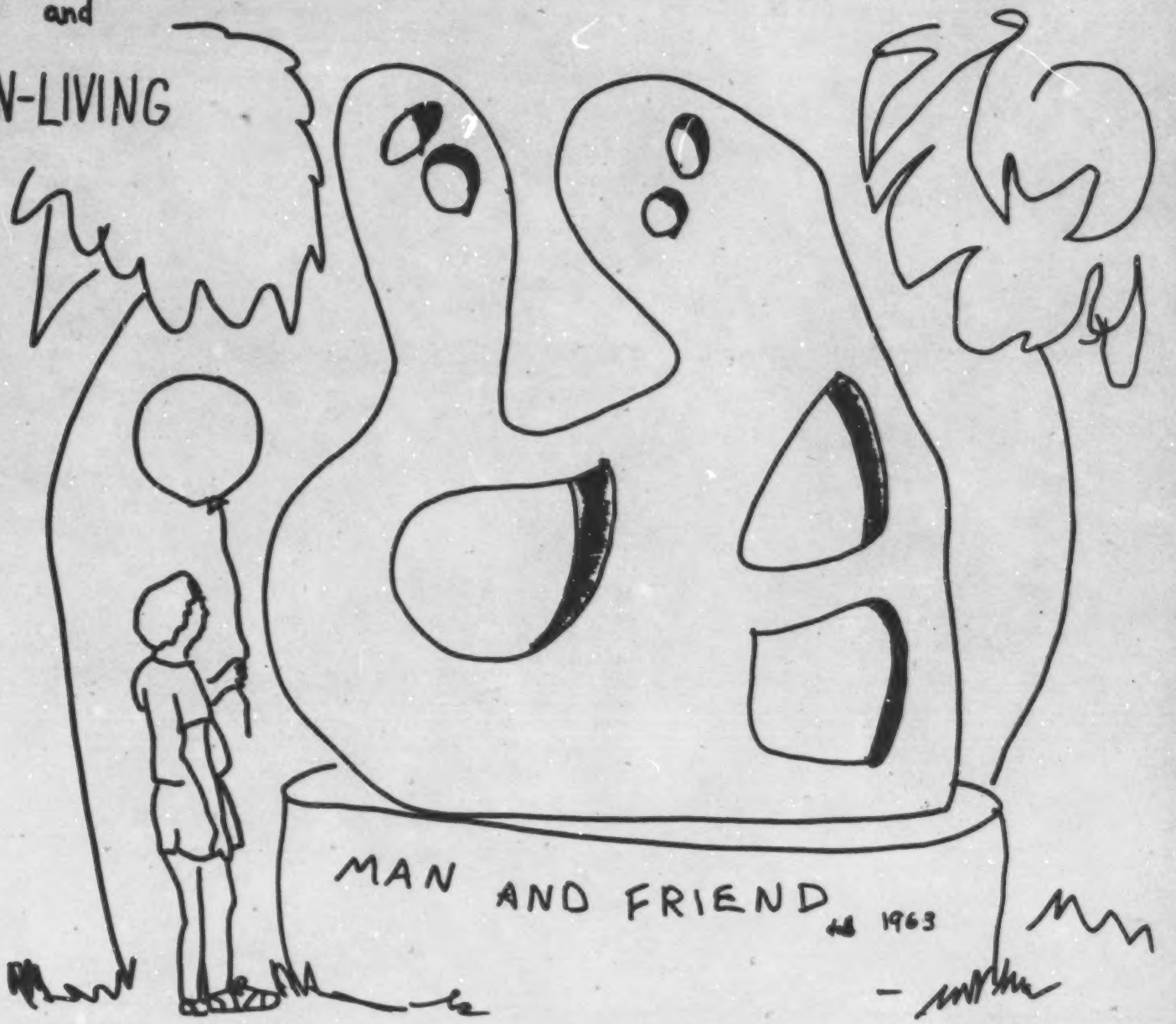
ENVIRONMENT

Objective: All living things need food, water, air, and protection. Each one lives in the environment where it can get these things. The student will be able to place familar living things in suitable environments.

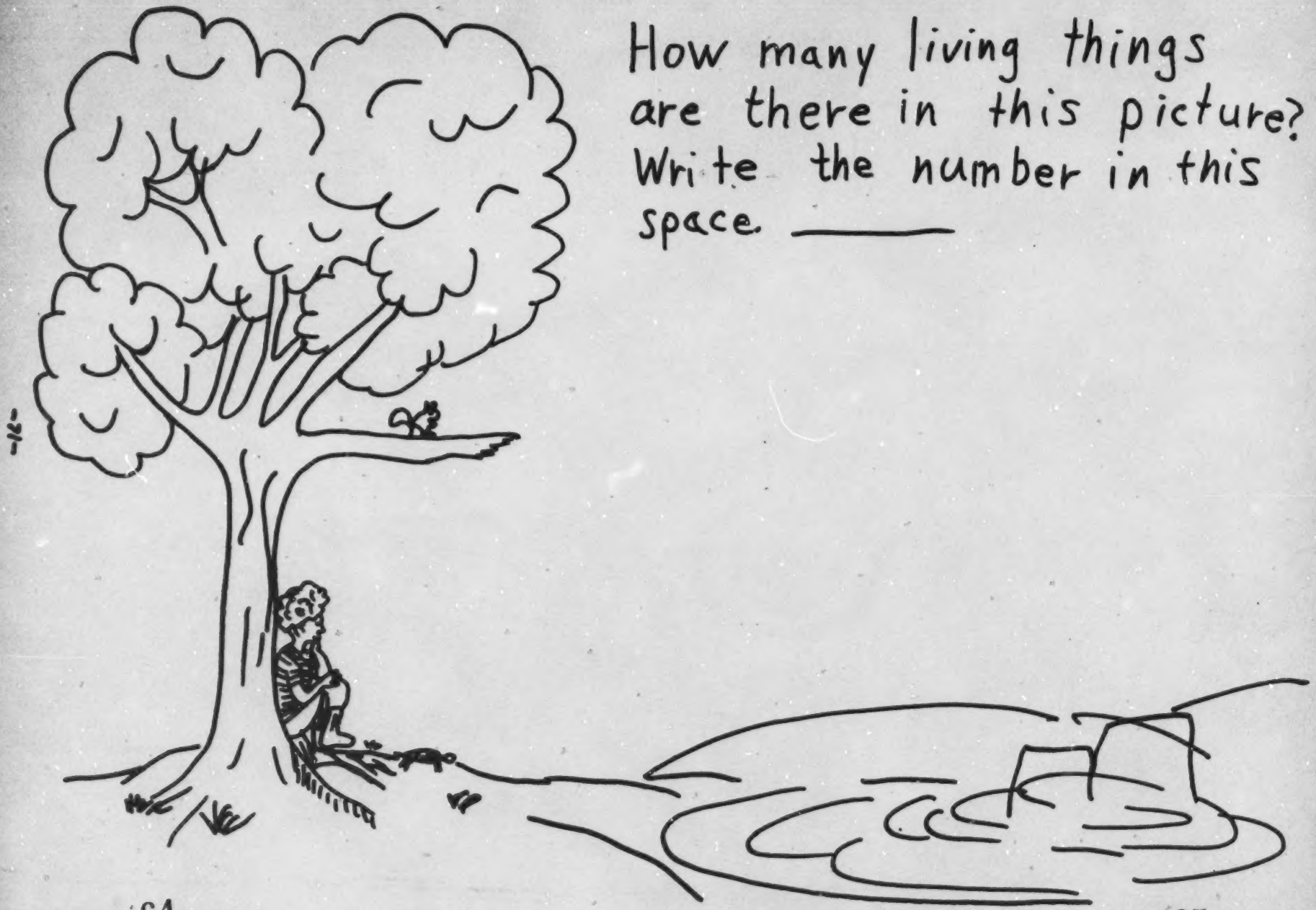
SALTWATER GRASSFLATS (ORGANISMS)

Objective: This is a specific environment. The students will study the shrimp, hermit crab, pelican, pipefish and snail and learn some of their characteristics. The student will then be able to identify these organisms and their certain characteristics.

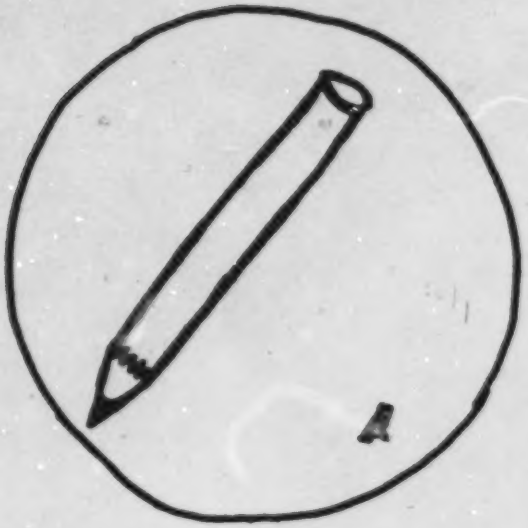
LIVING and NON-LIVING

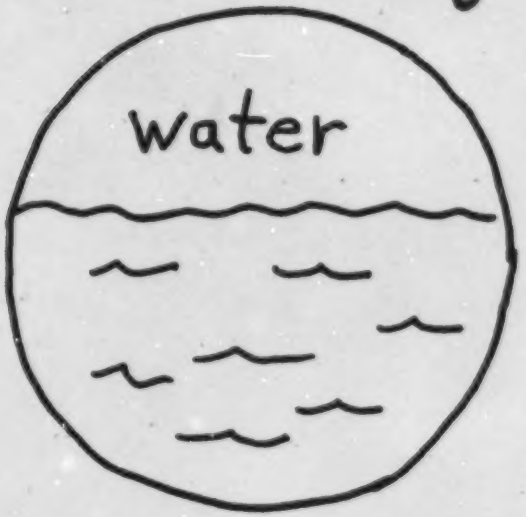


How many living things are there in this picture? Write the number in this space. ____

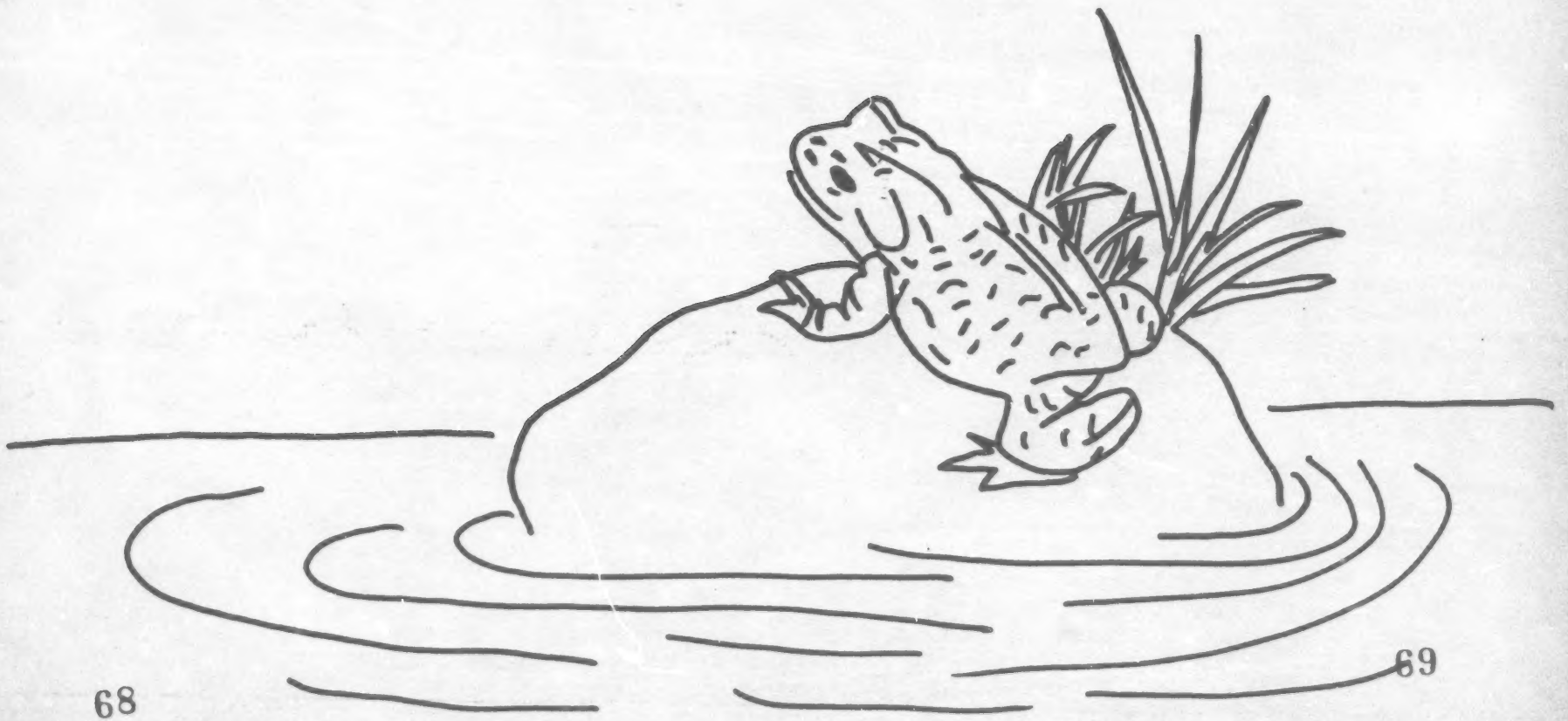


Put an X over the living things.

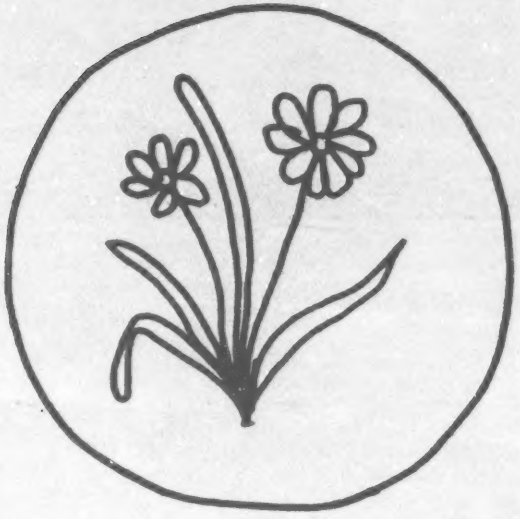


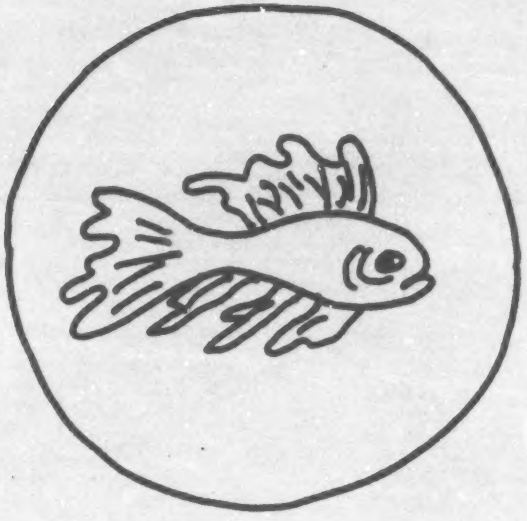


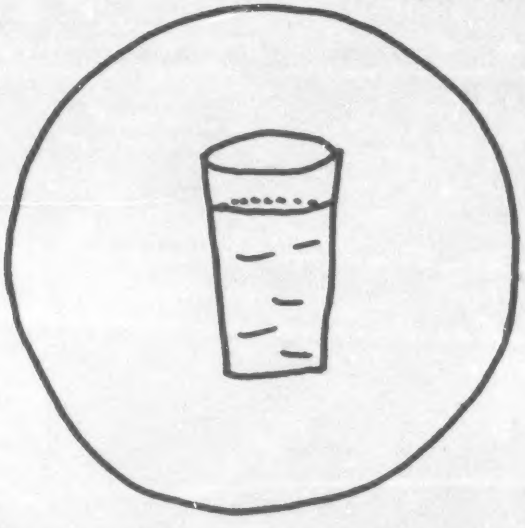
Color the living things green.



Put an X over the non living thing.

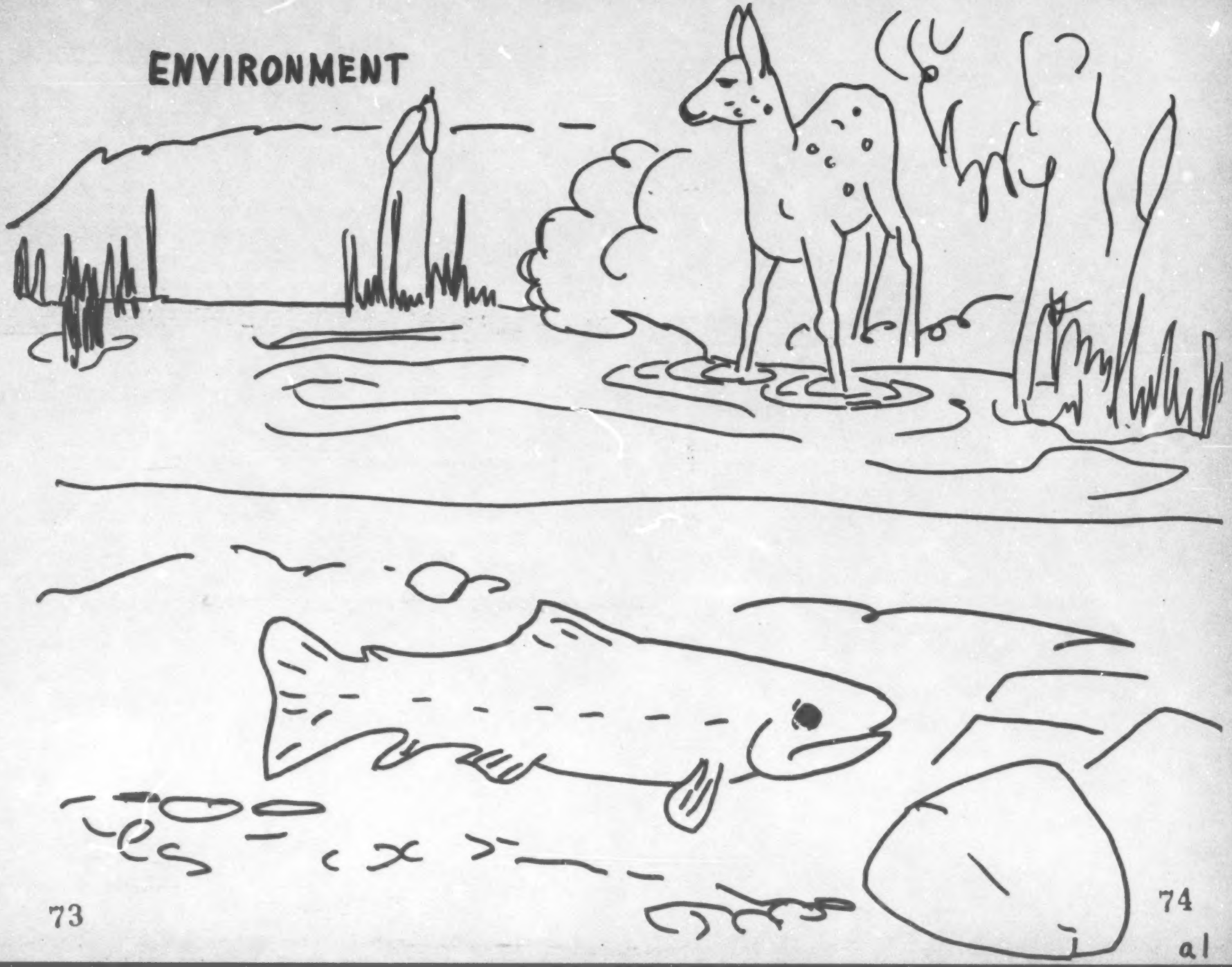


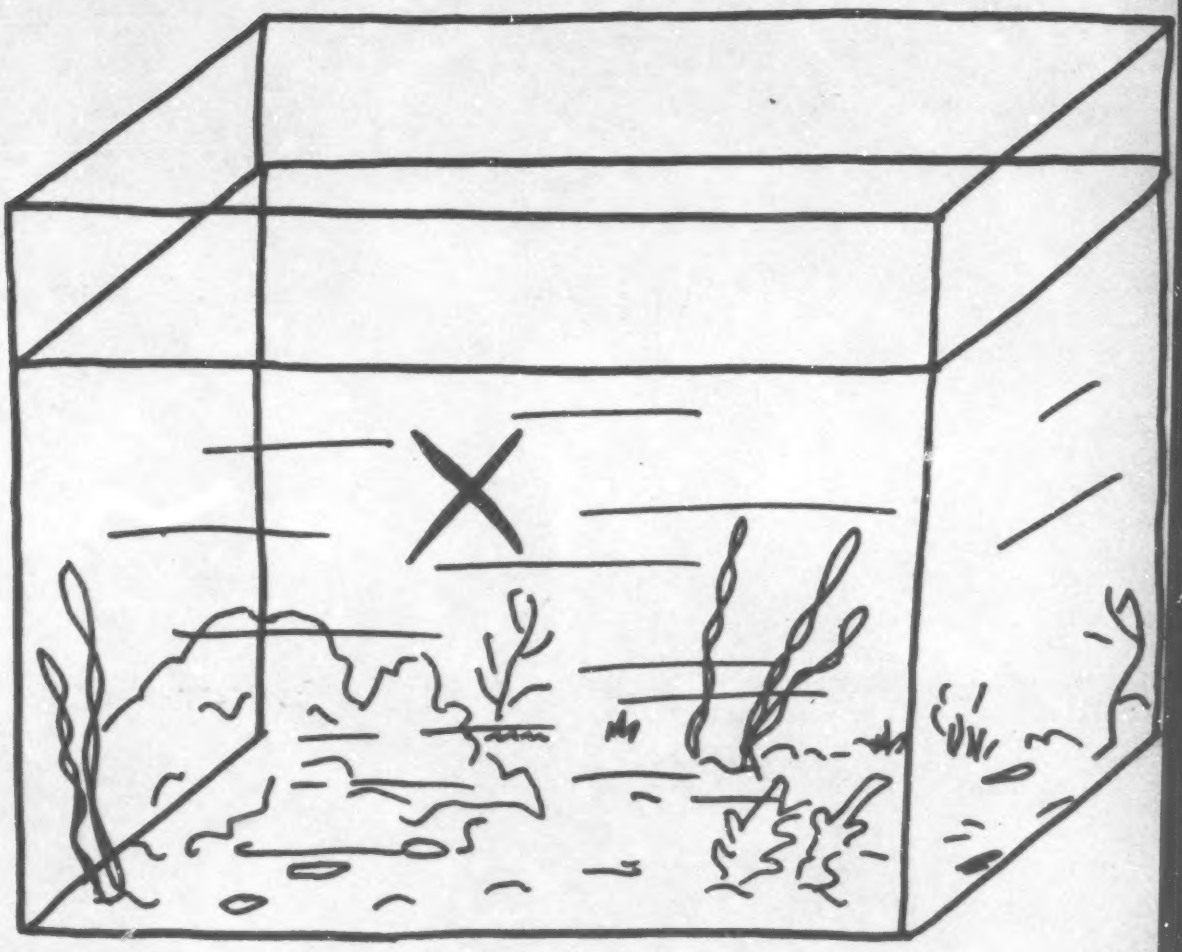




-17-

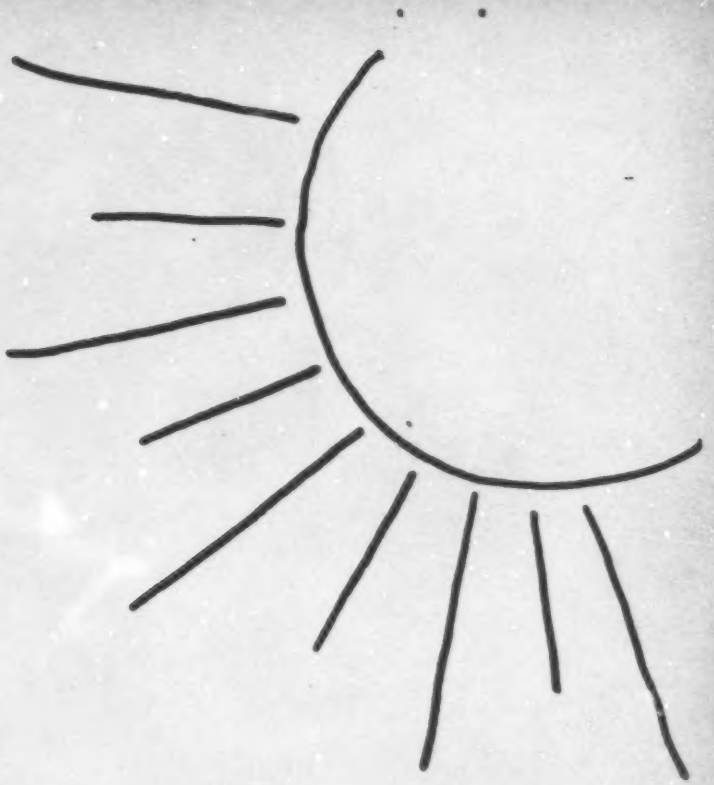
For this set of worksheets have the children cut out the animal circles from page 93. Then have them paste the circles onto the appropriate environment pages.

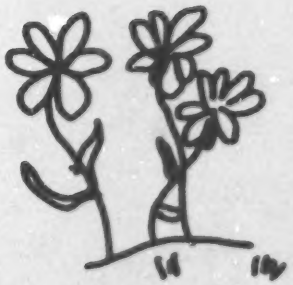

ENVIRONMENT
73
74
a1



76

77 a3





78

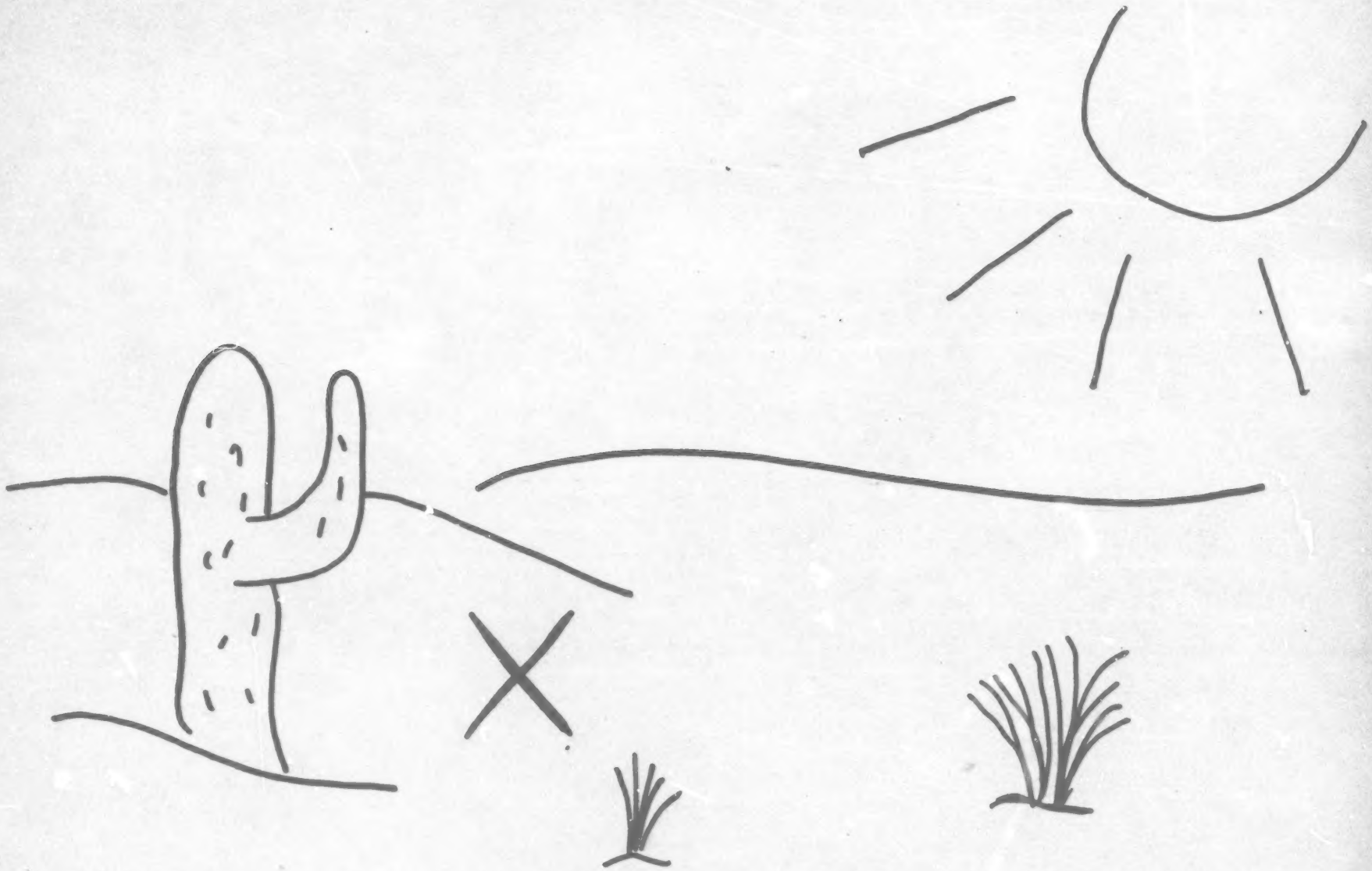
79

a4

80

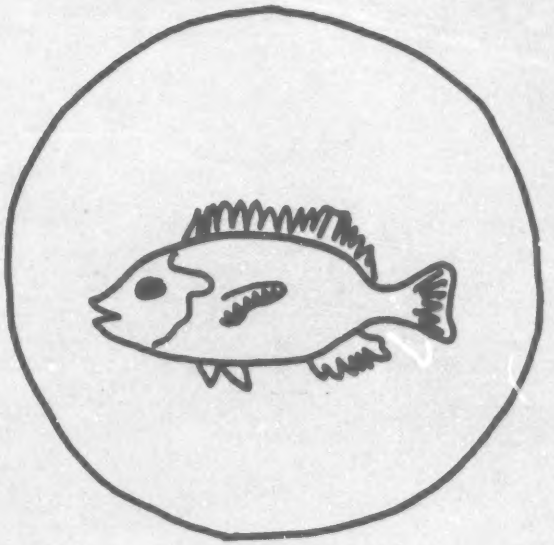
81

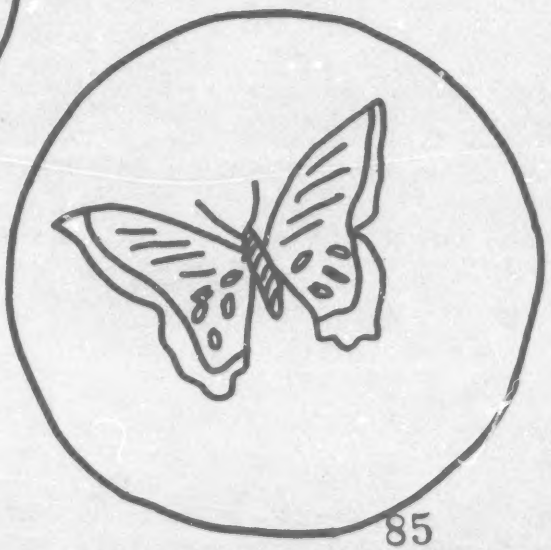
a 5



82

83





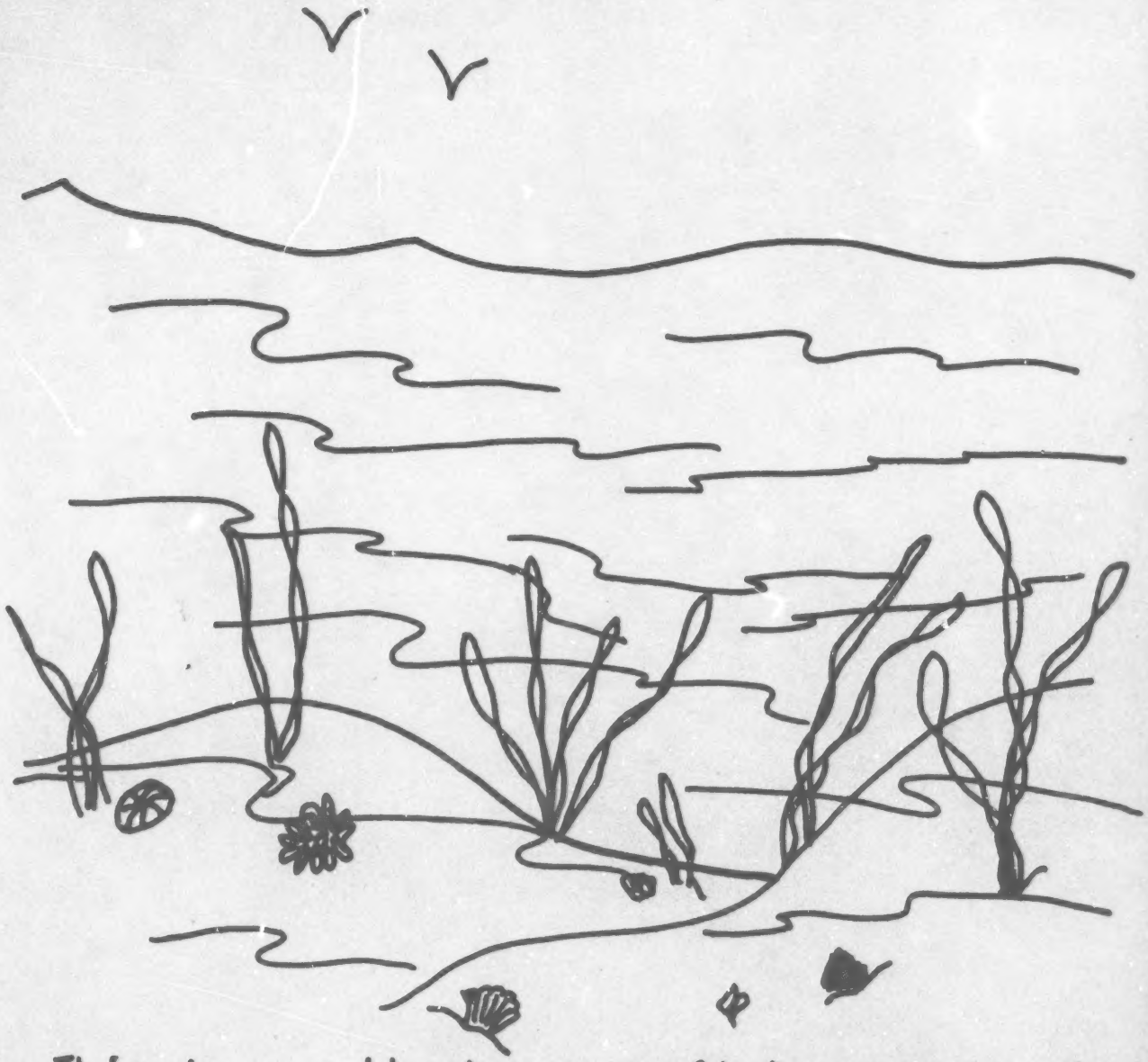
84

85

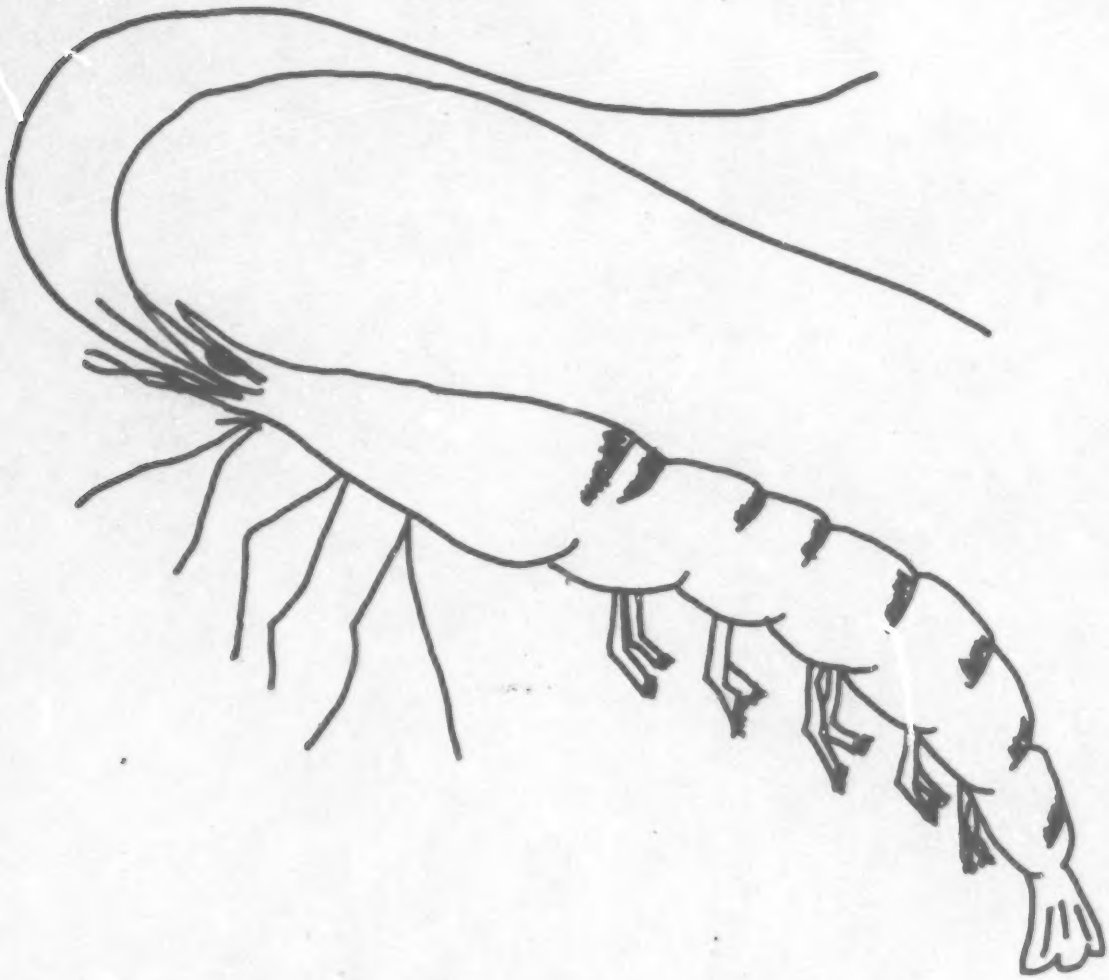
For this set of worksheets read with the children and have them color the pages.

After this section of activities you should be ready to administer the accompaning tests. (reproduce one set of tests for each student)

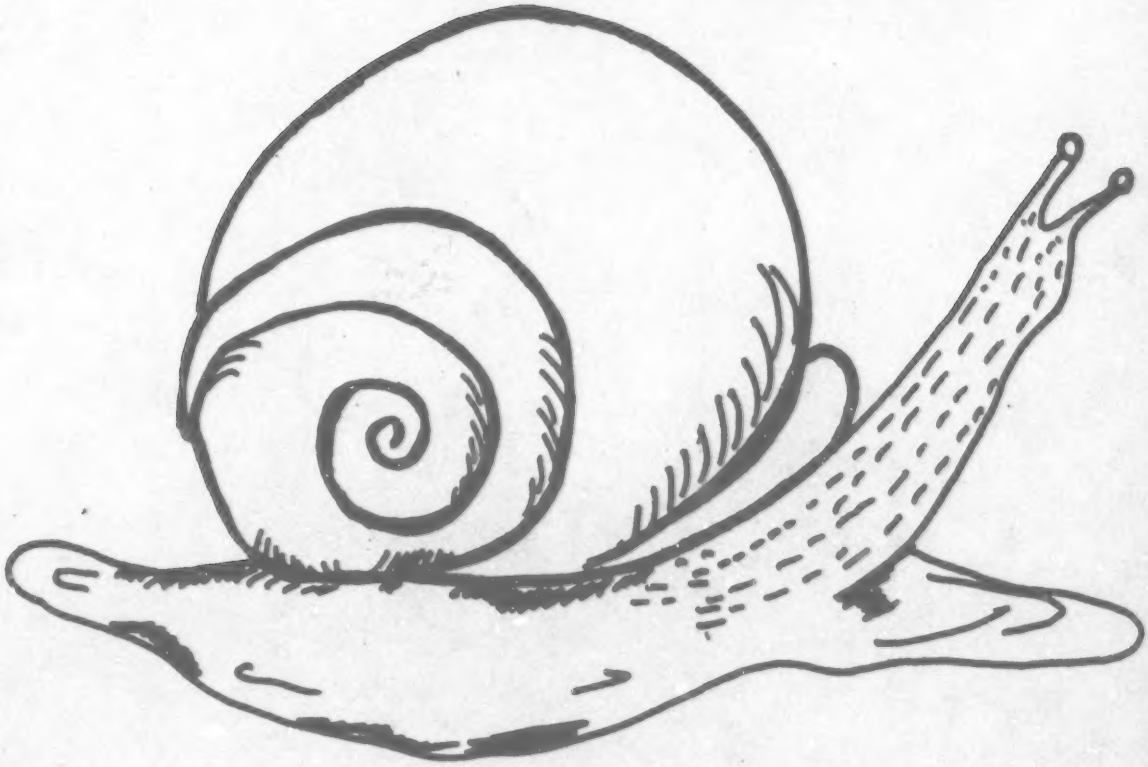
Let's Learn About
SALTWATER
GRASSFLATS



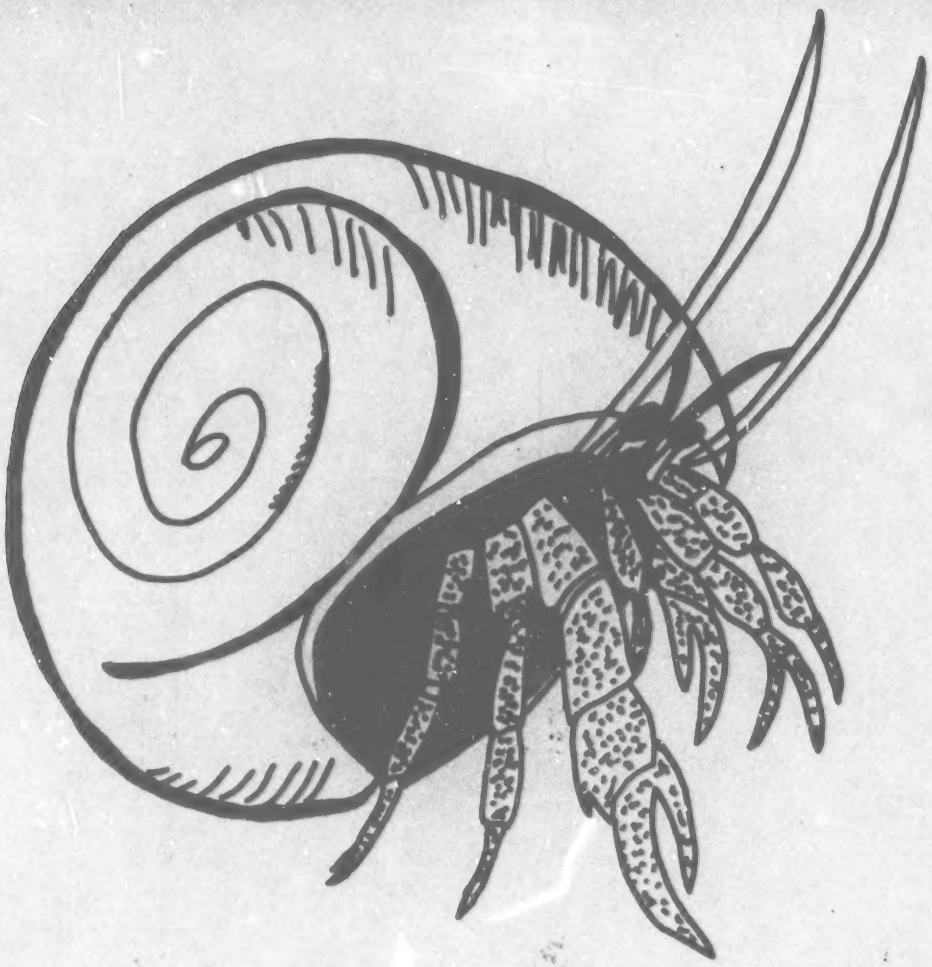
This is a saltwater grassflat. A saltwater grassflat is a grassy area in the shallow part of a salty body of water. Many plants and animals make their home here. In this booklet, you will learn about five animals which you might find here.



I am a shrimp. I am a very quick swimmer. I have many little legs. Many animals of the saltwater grassflats eat me.

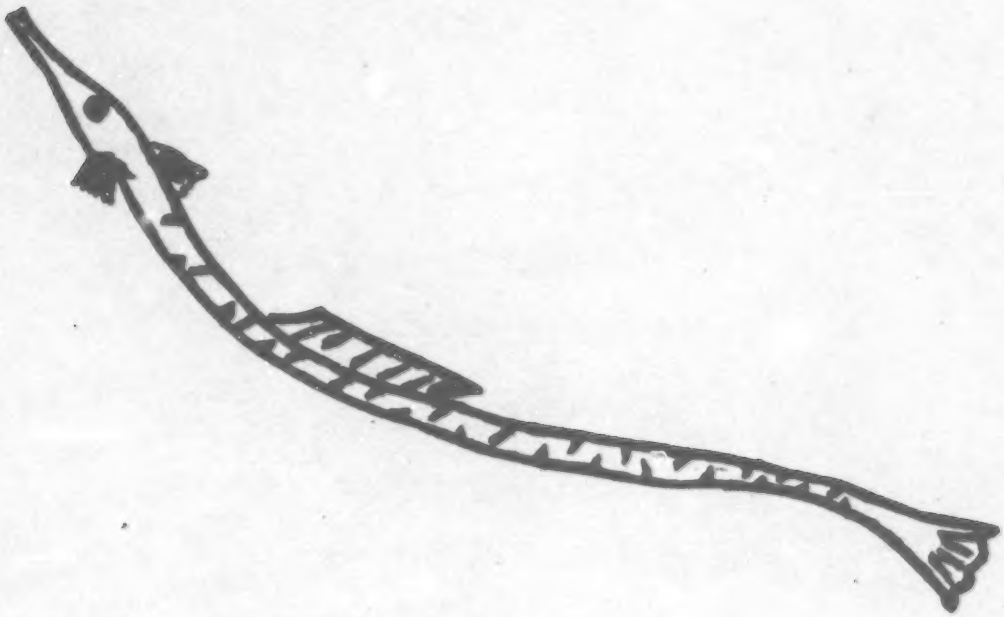


I am the slow moving snail. I live on the grass in the saltwater grassflats. I eat the grass and other dead plants I find there.



I am a hermit crab. I make my home in empty snail shells. As I get bigger, I must find bigger shells to live in.

I am a pelican. I dive for fish to eat. I spend a lot of time near the saltwater grassflats looking for food.



I am a pipefish. I live in the grass of the saltwater grassflats. I eat shrimp that I find there.

APPENDIX "B"

Text, Key for Test, and Test Sheets

Text and Key for Test

Directions: Listen as I read each question. Look at the four(4) pictures for that question and mark " X" on the picture tha t answers the question.

1. Living and Non-living

1. Which of these shows a living thing? (A)
2. Which of these living things could live in the water? (D)
3. Which of these is a living thing? (B)
4. Choose the Non-Living thing. (C)
5. Which of these living things could we find in the Anclote River? (A)

2. Environment

1. Which of these shows your environment right now? (B)
2. Which of these shows a fish's environment? (C)
3. Which is the best environment for a palm tree? (A)
4. Which of these shows a dry environment? (B)
5. Which one of these is the best environment for a squirrel? (D)
6. Which of these is the best environment for you? (A)
7. What should we do at school? (B)
8. Which of these is the best environment for the shrimp? (C)
9. Which of these is the best environment for the pipefish? (A)
10. Which environment do you live in? (D)

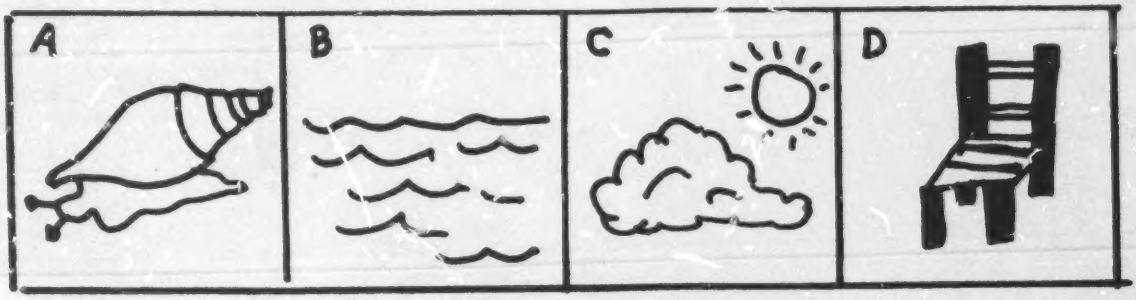
3. Organisms

1. Which of these animals has many legs? (A)
2. Which of these is a SNAIL? (D)
3. Which of these is a PIPEFISH? (B)
4. Which of these is a PELICAN? (B)
5. Which of these is a HERMIT CRAB? (A)
6. Which of these is a quick swimmer? (D)
7. Which of these hides in the grass and eats shrimp? (A)
8. Which animal lives in the shells of other animals? (C)
9. Which of these is a slow moving animal that lives on the blades of grass? (B)
10. Which of these dives into the water to scoop up the fish it eats? (C)

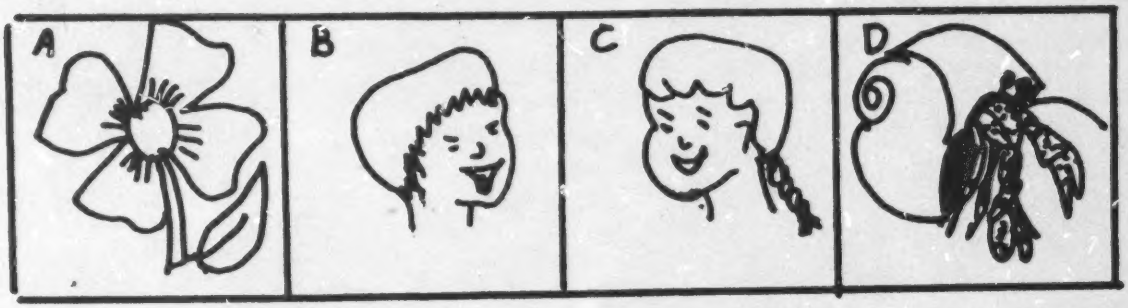
LIVING AND NON-LIVING

Name _____ TEST P. 1

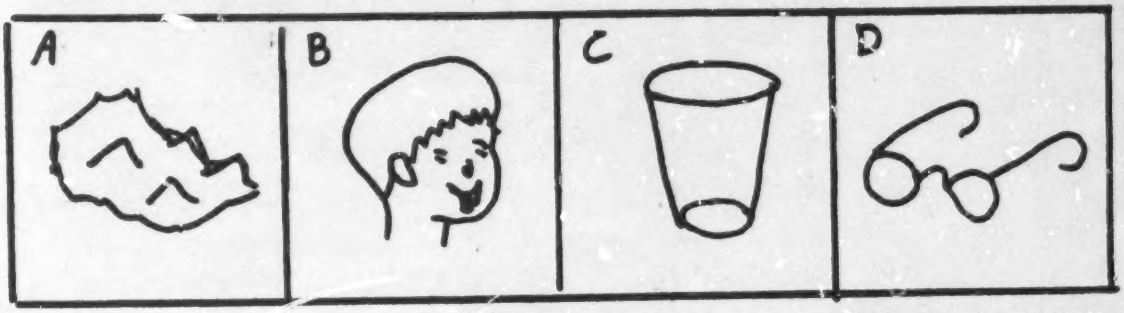
1.



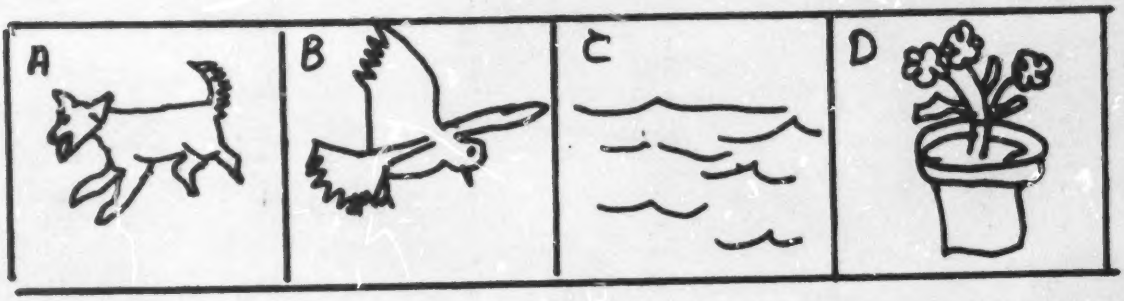
2.



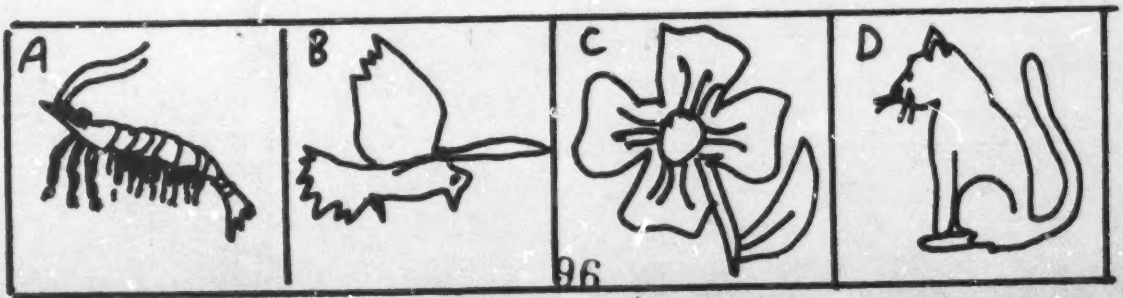
3.



4.



5.

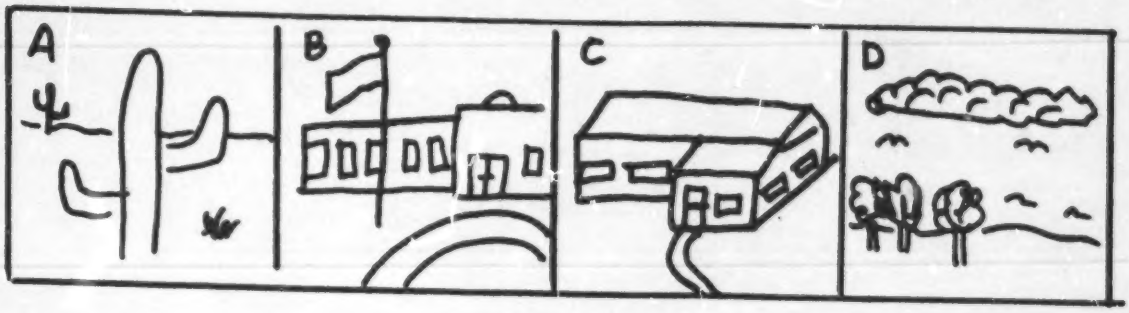


96

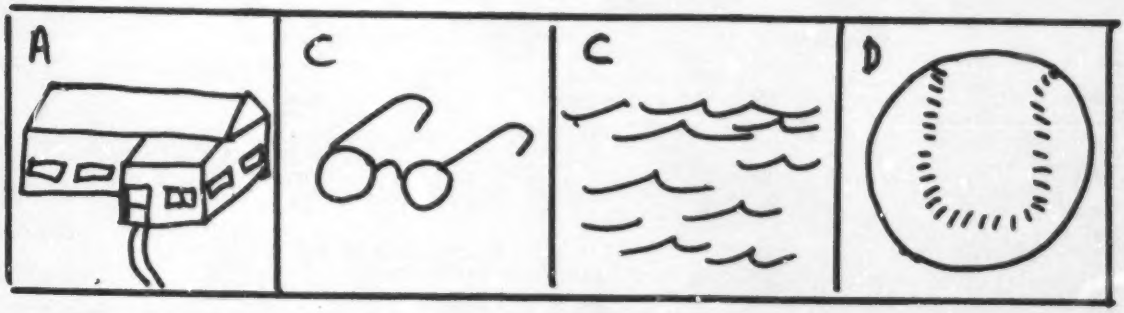
ENVIRONMENT

Name _____ TEST P-2

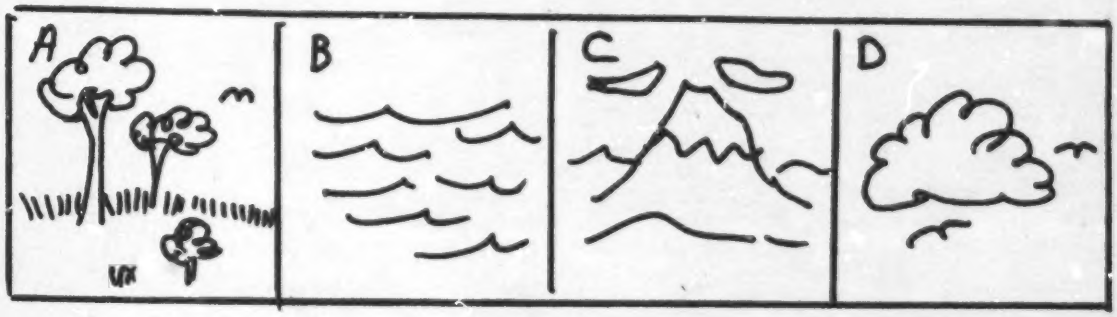
1.



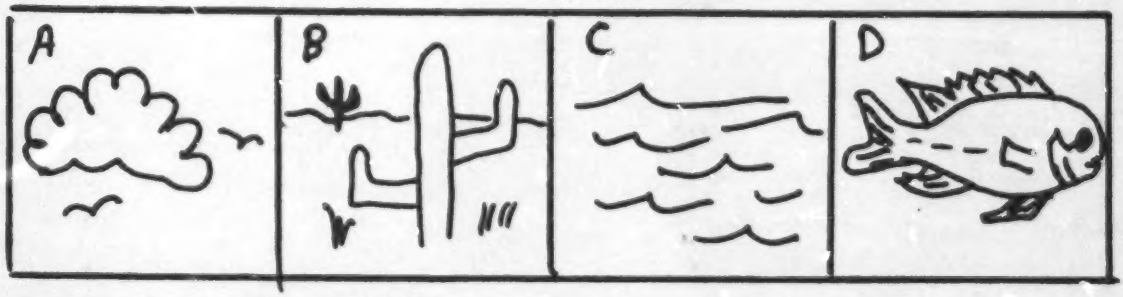
2.



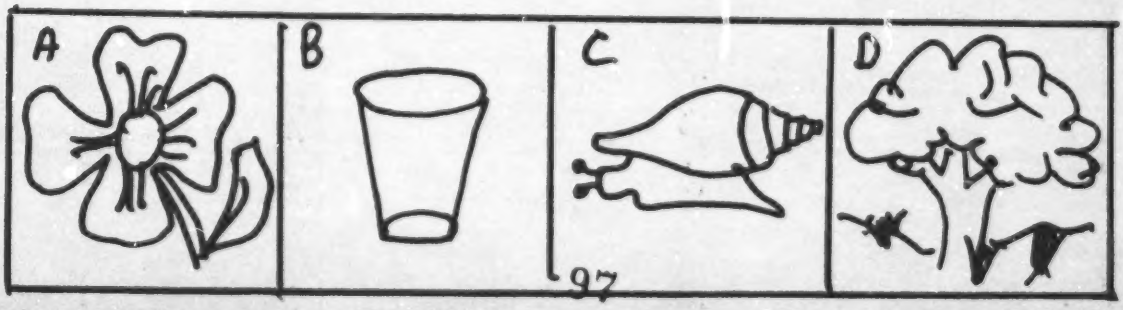
3.



4.



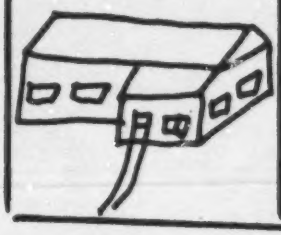
5.



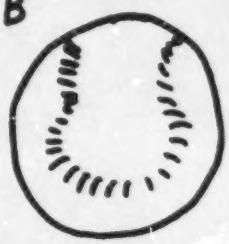
97

ENVIRONMENT

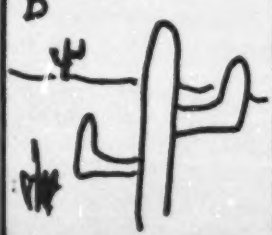
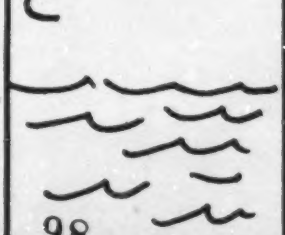
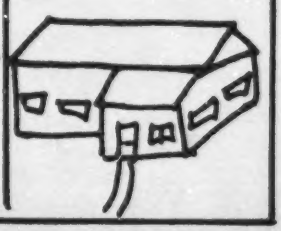
Name _____ Test P3

6. A  B C D

7. A B C D

8. A B  C D

9. A B C D

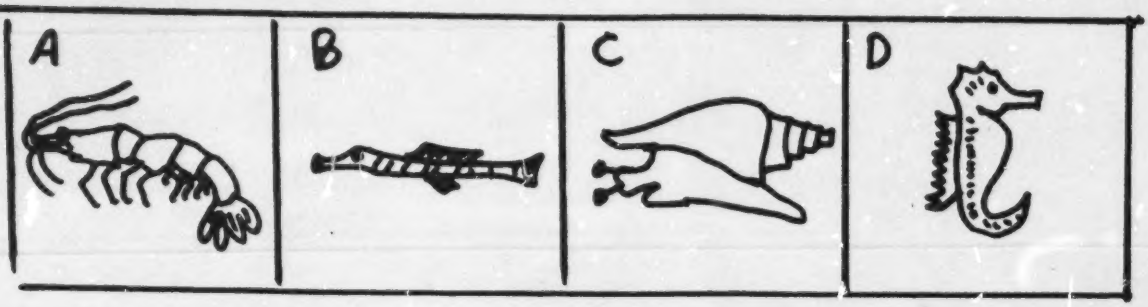
10. A B  C  D 

98

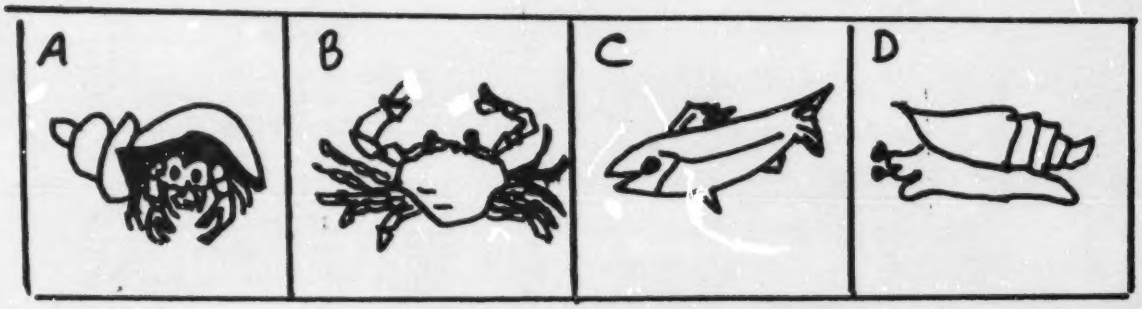
ORGANISMS

Name _____ Test P 4

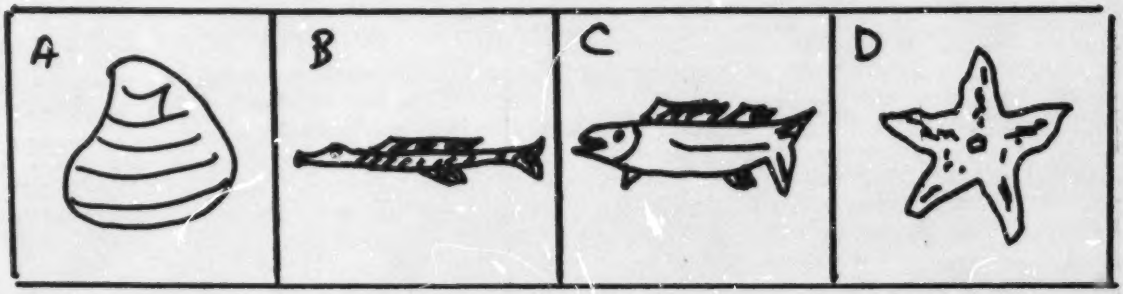
1.



2.



3.



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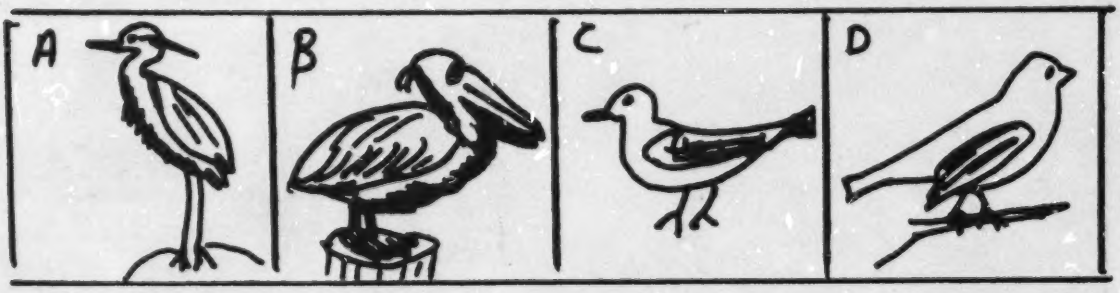
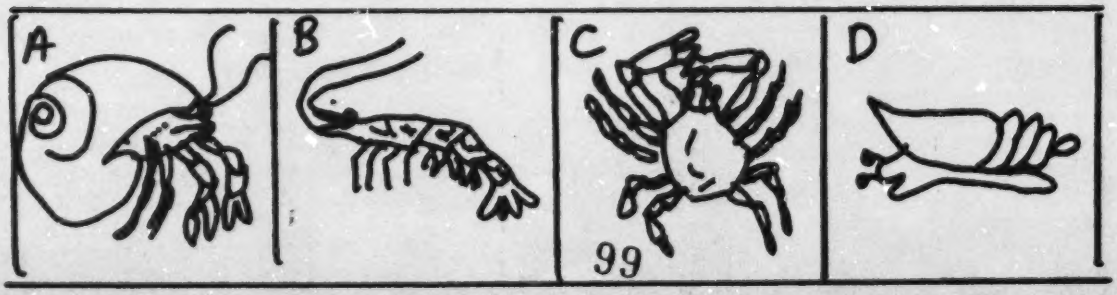


5.

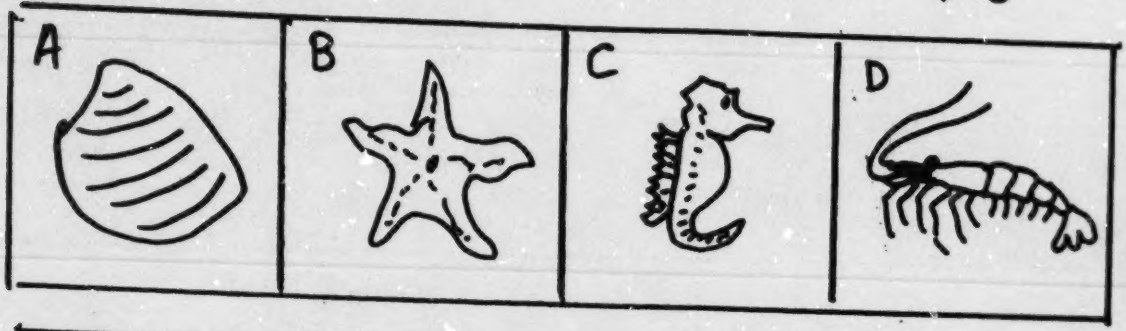


99

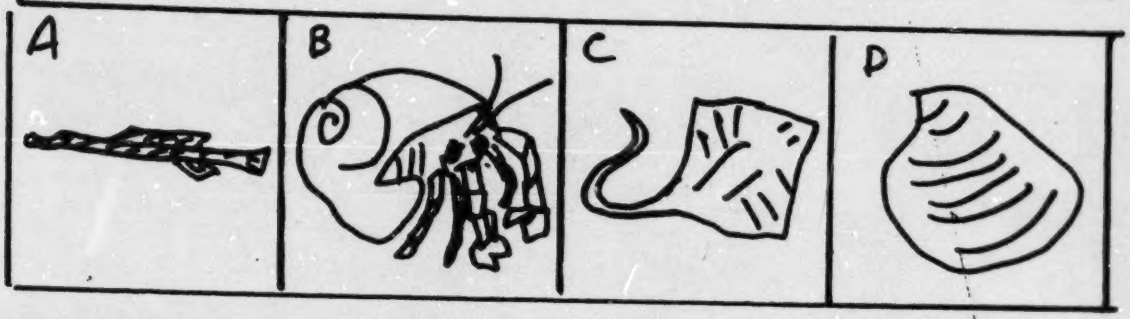
ORGANISMS

Name _____ Test P-5

6.



7.



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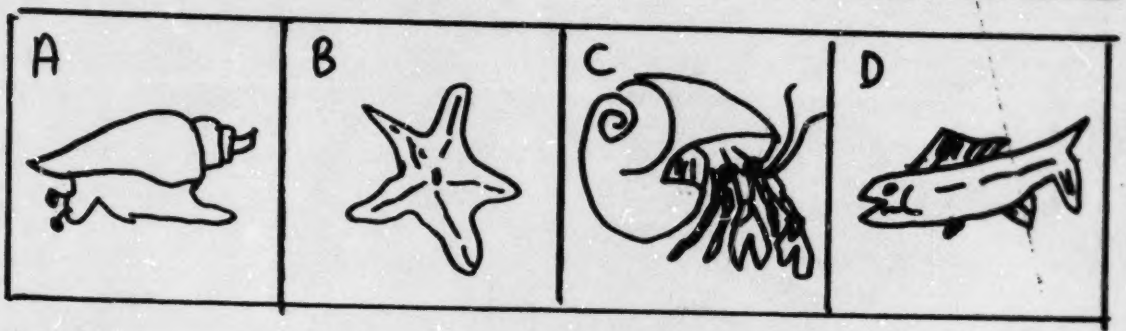

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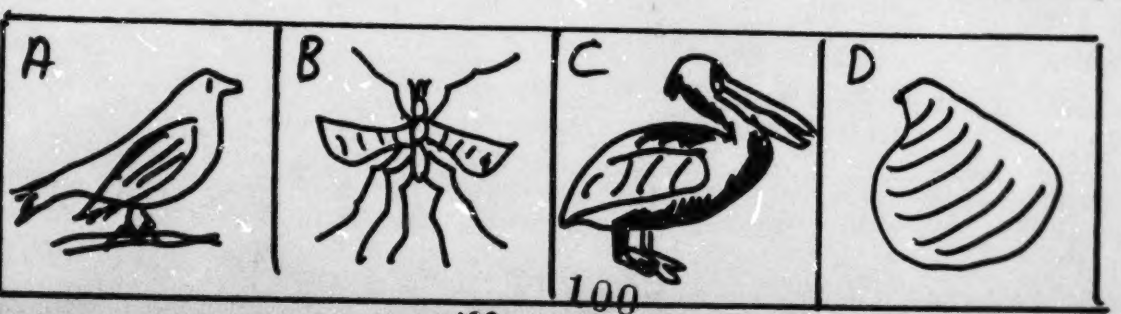

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PINELLAS COUNTY FILM LIST

Adapting To Changes In Nature	11 min.	color	K-6
Animals Friends	11 min.	color	K-3
Animal Homes	11 min.	color	1-3
Animals and Pam	14 min.	color	K-3
Animals Move in Many Ways	11 min.	b/w	K-3
Animals Useful to Man	11 min.	b/w	1-6
Balanced Aquarium	11 min.	b/w	1-6
Beetles: Backyard Science	10 min.	color	K-6
Bird Homes	11 min.	color	K-6
Birds & Their Characteristics	11 min.	color	1-6
Birds: How We Identify Them	11 min.	color	1-6
Birds of The Marshes (Second Edition)	11 min.	color	1-9
Butterfly	8 min.	color	K-3
Carp in a Marsh	7 min.	color	K-3
Cities and Beauty - Cities Can Be Beautiful	8 min.	color	K-3
Community Helpers: Sanatation Department	11 min.	color	K-6
Community Keeps Healthy	11 min.	color	K-6
Crickets: Backyard Science	10 min.	color	K-9
Ducks, Geese and Swans	11 min.	color	K-6
Finding Out About Rocks	13 min.	color	1-6
Finding Out About the Water Cycle	13 min.	color	1-6
Geometry: Shapes	10 min.	color	1-6
How Air Helps Us	11 min.	color	1-3
How Animals Eat	11 min.	b/w	1-6
How Animals Move	11 min.	b/w	1-6
How Birds Help Us	11 min.	color	1-6
How Seeds Are Scattered	11 min.	b/w	1-6
How Sunshine Helps Us	11 min.	color	1-3
How Trees Help Us	11 min.	color	1-6
How Water Helps Us	11 min.	color	1-3
How Weather Helps Us	11 min.	color	1-3
Insects: How to Recognize Them	11 min.	color	K-6
Johnny Appleseed	14 min.	color	4-9
Learning About Flowers	11 min.	color	1-3
Learning About Seeds	11 min.	color	K-6
Let's Watch Plants Grow	11 min.	color	1-6
Life in an Aquarium	11 min.	b/w	1-6
Looking At Amphibians	11 min.	color	K-6
Looking At Fishes	11 min.	color	K-3
Looking At Mammals	11 min.	color	K-3
Looking At Reptiles	11 min.	color	K-3
Moose Baby	13 min.	color	K-6
Nation of Spoilers	11 min.	color	K-12
Ocean: A First Film	11 min.	color	K-6
Oregon Trail	25 min,	b/w	7-9
Our Wonderful Body: How It Grows	11 min.	color	K-3

People Are Alike and Different	11 min.	color	K-3
Plants Are Different and Alike	11 min.	color	K-3
Prowlers of the Everglades	32 min.	color	1-12
Rain	9 min.	color	K-3
Resources	10 min.	color	K-6
River: A First Film	10 min.	color	K-6
Seasons of the Year	11 min.	color	1-6
Snails: Backyard Science	11 min.	color	K-6
Terrarium: Classroom Science	12 min.	color	K-6
Water For the City	11 min.	color	K-6
We Get Food From Plants and Animals	11 min.	b/w	1-6
We Explore the Beach	11 min.	color	1-3
We Explore Ocean Life	11 min.	color	1-6
We Explore the Stream	11 min.	b/w	K-6
We Explore the Woodland	11 min.	b/w	K-3
We Visit the Seashore	11 min.	b/w	K-3
Westward Move	25 min.	color	4-9
What Can You Do?	11 min.	color	K-6
What Is A Neighborhood?	11 min.	color	1-6
What Plants Need For Growth	11 min.	color	K-3
Where Does Our Food Come From?	11 min.	b/w	1-6
Why Animals Live	11 min.	color	K-3